STIC EIC 2100
Search Request Form

15578?85

Today's Date: 6/6/2005

What date would you like to use to limit the search?

Priority Date: 4/7/2001   Other:

Name LESLIE WONG

AU 2167   Examiner # 78953

Room # 3B09   Phone 2-4126

Serial # 09/918,295

Format for Search Results (Circle One):

(PAPER)   DISK   EMAIL

Where have you searched so far?

USP DWPI EPO JPO ACM IBM TDB

IEEE INSPEC SPI   Other _____

Is this a "Fast & Focused" Search Request? (Circle One) (YES) NO

A "Fast & Focused" Search is completed in 2-3 hours (maximum). The search must be on a very specific topic and meet certain criteria. The criteria are posted in EIC2100 and on the EIC2100 NPL Web Page at http://ptoweb/patents/stic/stic-tc2100.htm.

What is the topic, novelty, motivation, utility, or other specific details defining the desired focus of this search? Please include the concepts, synonyms, keywords, acronyms, definitions, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract, background, brief summary, pertinent claims and any citations of relevant art you have found.

Topic. Virtual hard Drive

Novelty: Virtual hard drive on an emulated Computer

* Write operations to the virtual drive are made to the differencing drive and the differencing drive records the writes to the virtual hard drive and expand in size to accomodate the content of write operations to the virtual hard drive

See attached Search history

STIC Searcher Geoffrey St-Leger   Phone 23590

Date picked up 6/8/5   Date Completed 6/8/5
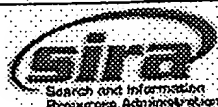
Set	Items	Description
S1	93503	EMULAT???? OR SIMULAT???? OR (VIRTUAL? OR GUEST)(2W)(PC? ? OR COMPUTER? ? OR SYSTEM? ? OR OS OR ENVIRONMENT)
S2	3245286	DRIVE OR DRIVES OR DISK? ? OR DISC? ? OR HARDDRIVE? ? OR H-ARDDISK? ? OR HARDDISC? ? OR STORE? ? OR STORAGE
S3	3214	(VIRTUAL OR EMULAT? OR SIMULAT? OR GUEST)(2W)S2
S4	6	DIFFERENCING(2W)(S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S5	9124	(TEMPORARY OR TRANSIENT OR STAGING)(2W)(S2 OR FILE? ? OR F-OLDER? ? OR PARTITION? ? OR AREA)
S6	64045	(SECOND? OR 2ND OR SUBORDINATE? OR CHILD OR DIFFERENT OR S-EPARATE)(2W)(S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AR-EA)
S7	1675	S1 AND S3
S8	66	S7 AND S4:S6
S9	701	(S1 OR S3) AND S4:S6
S10	238294	(WRIT??? OR WRITTEN OR CHANG??? OR DELET???? OR ERAS???? OR UPDAT??? OR EDIT??? OR MODIF???? OR MODIFICATION? ? OR ALTER-??? OR ALTERATION? ?)(10N)(S2 OR FILE? ? OR FOLDER? ? OR PART-ITION? ? OR AREA)
S11	122	S9 AND S10
S12	35	S11 NOT (STORE OR STORAGE)
S13	15	S3 AND S5
S14	29950	S2(7N)(SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR -RECONCIL? OR CONFORM? OR MAP????)
S15	14	S11 AND S14
S16	935	RAM()(DISK OR DRIVE? ?)
S17	10	S16(10N)(SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR RECONCIL? OR CONFORM? OR. MAP????)

15/5/1   (Item 1 from file: 347)

06898240   **Image available**
DATA STORAGE SYSTEM AND DATA MANAGING METHOD FOR THE SAME

ABSTRACT

PROBLEM TO BE SOLVED: To provide a data storage system for dynamically controlling the throughput of a logically single **virtual** data **storage** device composed of physically **different** plural data **storage** devices.

SOLUTION: A dike subsystem 5 composes a **virtual disk** device by securing in a state of overlapping the same data area on plural magnetic disk devices 9 and when a **write** request to this **virtual disk** device is received, a **write** request command is inputted to a queue 8 of the magnetic disk device 9 with the minimum load. Besides, copy to the other magnetic disk device 9 is executed in the background. When a read request is received, a read request command is inputted to the queue 8 of the magnetic disk device 9, where effective data exist, with the minimum load. Then, by managing the number or the like of magnetic disk devices 9 composing of the **virtual disk** device while using a logical disk **map** 6, the throughput performance of the **virtual disk** device is dynamically controlled.

15/5/2   (Item 2 from file: 347)

06178433   **Image available**
SIMULATION METHOD FOR COMPUTER STORAGE DEVICE

ABSTRACT

PROBLEM TO BE SOLVED: To provide a system and a method for remapping a logic reference corresponding to a 1st storage device to a **2nd storage** device.

SOLUTION: A computer is provided with a processor for driving a software containing an operating code, a 1st storage device 16 which can be accessed by the processor and is divided into more than one domains while having the 1st domain in active state, and a **2nd storage** device which cannot be

accessed by the processor, the operating code is provided with the logic reference corresponding to the **2nd storage** device and a table 42 for mapping the logic reference to the **2nd storage** device, a reference **change** routine is provided for dynamically **changing** the logic reference corresponding to the 2nd domain of the 1st **storage** device 16 by **changing** the table 42, the table 42 is updated after the reference has been changed and in place of it, an arbitrary reference with respect to the **2nd storage** device is generated, corresponding to the 2nd domain of the 1st storage device 16.

 15/5/3   (Item 3 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2005 JPO & JAPIO. All rts. reserv.

05293717   **Image available**
CACHE MANAGEMENT DEVICE

PUB. NO.:   08-249217 [JP 8249217 A]
PUBLISHED: September 27, 1996 (19960927)
INVENTOR(s):   KAWAMURA TOSHIKAZU
               TSUCHIYA TAKEHIKO
               WAKIZONO TATSUJI
               TANAKA TATEJI
APPLICANT(s): TOSHIBA CORP [000307] (A Japanese Company or Corporation), JP
               (Japan)
APPL. NO.:   07-055554 [JP 9555554]
FILED: March 15, 1995 (19950315)
INTL CLASS: [6] G06F-012/00
JAPIO CLASS: 45.2 (INFORMATION PROCESSING -- Memory Units)

                              ABSTRACT
PURPOSE: To provide a cache management device capable of mapping the page of a cache area to **virtual storage** space and being utilized for the fault restoration of a data base as well.
CONSTITUTION: This device is provided with a page management means 32 for managing data stored in the data base 31 by a logical page unit, the cache area 25 arranged in a nonvolatile area on a **secondary storage** device, a page storage means for storing the page received from the data base 31 in the cache area 25, a data base area 22 arranged in the **virtual storage** space, a **mapping** means 23 for making the page **stored** in the cache area 25 correspond to the free area of the data base area 22, a means for dissolving **mapping** corresponding to a **storage** request and making the **changed** page contents of the data base **area** 22 reflected in the cache **area** 25 and the page **storage** means for making the page **updated** in the

cache **area** 25 reflected in the data base 31.

 15/5/4   (Item 4 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2005 JPO & JAPIO. All rts. reserv.

02424040   **Image available**
NON-SHARED PATCHING SYSTEM FOR SHARED PROGRAM

PUB. NO.:   63-040940 [JP 63040940 A]
PUBLISHED: February 22, 1988 (19880222)
INVENTOR(s):   MUROTANI YUJI
APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP
               (Japan)
APPL. NO.:   61-184633 [JP 86184633]
FILED: August 05, 1986 (19860805)

INTL CLASS: [4] G06F-009/46; G06F-009/06; G06F-012/10
JAPIO CLASS: 45.1 (INFORMATION PROCESSING -- Arithmetic Sequence Units);
               45.2 (INFORMATION PROCESSING -- Memory Units)
JOURNAL: Section: P, Section No. 731, Vol. 12, No. 253, Pg. 9, July
               16, 1988 (19880716)

ABSTRACT
PURPOSE: To execute a patch change of a shared program, to only a specific
task, by storing the **change** contents in an address in a program on a main
storage device, at the time loading a page containing an address of the
shared program, onto an intrinsic **virtual** **storage** area.

CONSTITUTION: First of all, a non-shared **virtual**   **storage** area 21 for
loading a shared program 5 is secured in an intrinsic **virtual**   **storage**
area 10 of a task 4. Subsequently, an address of a shared program store
area 22 of the program 5 in a **secondary** **storage** device 6 is set to an
external page table corresponding to the storage area 21. Simultaneously,
by relocating a virtual address of the program 5 so as to be brought to
addressing to the storage area 21, the storage area 22 in the device 6 is
brought to **mapping** to the **storage** area 21. Thereafter, a real page RP1
of a main storage device 7 is allocated to the storage area 21 by a paging
function, and a program text of the program 5 is page-loaded from the
device 6. In such a case, the change contents are sent to the real page RP1
of the device 7 from a **change** contents **store** device 3.

 15/5/5   (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

016080223   **Image available**
WPI Acc No: 2004-238084/200422
XRPX Acc No: N04-188786
   Remote digital data transferring method, involves saving indication of
   write command as entry in queue file and sending a copy of data file
   to the server based on entries, where file is to be copied from data file
   on file system
Patent Assignee: GRUINTINE PUECHE INC (GRUI-N); ELDER K (ELDE-I); HEMMERS O
   (HEMM-I)
Inventor: ELDER K; HEMMERS O
Number of Countries: 100 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20040039889	A1	20040226	US 2002225103	A	20020820	200422	B
WO 200419214	A1	20040304	WO 2003US23333	A	20030725	200422	
AU 2003256817	A1	20040311	AU 2003256817	A	20030725	200457	

Priority Applications (No Type Date): US 2002225103 A 20020820
Patent Details:

Patent No	Kind Lan Pg	Main IPC	Filing Notes
US 20040039889 A1	19	G06F-012/16	
WO 200419214 A1 E		G06F-012/16	

   Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA
   CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN
   IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ
   OM PH PL PT RO RU SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM
   ZW
   Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB
   GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ
   UG ZM ZW

AU 2003256817 A1	G06F-012/16	Based on patent WO 200419214

Abstract (Basic): US 20040039889 A1
        NOVELTY - The method involves receiving an indication of a **write**
    command to a data **file** on a **file** system on a server. The indication

is saved as an entry in a queue file (425) that stores entries of processed file system commands to the file system. A copy of the data file is sent to another server based on the entries in the queue file. The copied data file is to be copied from the data file on the file system.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a computer system.

USE - Used for transferring digital data through mirroring, backup and **synchronization** between local and geographically remote data **storage** facilities.

ADVANTAGE - The method allows to write themselves in a separate, volatile buffer system and hence does not require **temporary** **storage** of the physical data **disk** . The method provides remote data **synchronization** without special hardware configurations or need for an expensive high-speed network.

DESCRIPTION OF DRAWING(S) - The drawing shows a block diagram of a dynamically loadable mirroring module (DLMM).
Data transfer agent (250)
File operations request (410)
Queue file (425)
Virtual file **system** (430)
Real file system (440)
pp; 19 DwgNo 3/9

Title Terms: REMOTE; DIGITAL; DATA; TRANSFER; METHOD; SAVE; INDICATE; WRITING; COMMAND; ENTER; QUEUE; FILE; SEND; COPY; DATA; FILE; SERVE; BASED; ENTER; FILE; COPY; DATA; FILE; FILE; SYSTEM
Derwent Class: T01
International Patent Class (Main): G06F-012/16
File Segment: EPI

15/5/6   (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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015597950   **Image available**
WPI·Acc No: 2003-660105/200362
XRPX Acc No: N03-526395
Data backup and restoration method in e.g. laptop computer, involves reallocating primary virtual storage to include data stored in secondary virtual storage **, by** updating virtual storage map **in response to** save command
Patent Assignee: VOOM TECHNOLOGIES INC (VOOM-N); BIESSENER D W (BIES-I); BIESSENER G R (BIES-I); CHECKY M T (CHEC-I)
Inventor: BIESSENER D W; BIESSENER G R; CHECKY M T
Number of Countries: 100   Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20030115432	A1	20030619	US 200120086	A	20011214	200362	B
WO 200352604	A1	20030626	WO 2002US40031	A	20021211	200362	
AU 2002359710	A1	20030630	AU 2002359710	A	20021211	200420	

Priority Applications (No Type Date): US 200120086 A 20011214
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030115432	A1		20	G06F-012/00	
WO 200352604	A1	E		G06F-012/16	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SI SK SL SZ TR TZ UG ZM ZW

AU 2002359710 A1   G06F-012/16   Based on patent WO 200352604

Abstract (Basic): US 20030115432 A1
      NOVELTY - A **virtual   storage   map** (VSM) is **stored** in a
      storage system (8) to allocate primary **virtual   storage** (10A) and
      secondary virtual **storage** (10B) within the system. The VSM is
      updated when a save command is received, so as to reallocate the
      primary **virtual   storage** to include data stored in the **secondary
      virtual   storage** .
      DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the
      following:
      (1) data backup and restoration system; and
      (2) data backup and restoration apparatus
      USE - For backup and restoration of data in computing device such
      as handheld computer, laptop computer, desktop computer, super
      computer, web server, file server and database server.
      ADVANTAGE - Enables quick backup and restoration of data within a
      computing device, by dynamically reallocating the **virtual   storage**
      within the storage system.
      DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of
      the data backup and restoration system.
      data backup and restoration system (2)
      processor (4)
      controller (6)
      storage system (8)
      primary **virtual   storage** (10A)
      secondary   virtual   storage (10B)
      pp; 20 DwgNo 1/14
Title Terms: DATA; RESTORATION; METHOD; COMPUTER; PRIMARY; VIRTUAL; STORAGE
 ; DATA; STORAGE; SECONDARY; VIRTUAL; STORAGE; UPDATE; VIRTUAL; STORAGE;
 MAP; RESPOND; SAVE; COMMAND
Derwent Class: T01
International Patent Class (Main): G06F-012/00; G06F-012/16
International Patent Class (Additional): G06F-012/14
File Segment: EPI

 15/5/7   (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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015279489   **Image available**
WPI Acc No: 2003-340420/200332
Related WPI Acc No: 2003-362634
XRPX Acc No: N03-272270
  **Mass storage system controller apparatus for computer system, has file
  system containing command region processor that** maps **files of data
  storage system to** mapped **data regions, based on** map **command and map
  arguments**
Patent Assignee: COMPUTER ASSOC THINK INC (COMP-N)
Inventor: BLADES J A; DEWEY M C; THOMPSON B A; VAN MAREN D J; WILSON J M
Number of Countries: 001 Number of Patents: 001·
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6493811	B1	20021210	US 9872582	P	19980126	200332 B
			US 99233979	A	19990120	

Priority Applications (No Type Date): US 9872582 P 19980126; US 99233979 A
 19990120
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6493811	B1		24	G06F-012/00	·Provisional application US 9872582

Abstract (Basic): US 6493811 B1
      NOVELTY - A file system (46) has a processor functioning as a

command region processor and as a **mapped** data region processor. A
disk emulator (48) passes controller commands including a **map**
command with map arguments to the processor. The command region
processor responds to the map command and **map** arguments, and **maps**
files of a data **storage** system to the **mapped** data regions.
    DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the
following:
    (1) peripheral system controller;
    (2) file control operations and data transfer operations performing
method;
    (3) computer program **storage** medium storing **write** /read access
provision program; and
    (4) computer program product for performing file control operations
and data transfer operations.
    USE - Mass storage system controller apparatus for computers
systems.
    ADVANTAGE - Allows multiple computers with different operating
systems to dynamically share data and storage at **different storage**
speeds. Integrates new ideas and functionality without disruption of
the existing behavior. Storage technology vendors can develop and
support storage devices with vastly different characteristic with the
same host integration. Also, allows capacity to be added seamlessly
without the need to bring the system down for a long reconfiguration
processes.
    DESCRIPTION OF DRAWING(S) - The figure shows a mass storage system
controller.
    file system (46)
    disk **emulator** (48)
    pp; 24 DwgNo 1/12
Title Terms: MASS; STORAGE; SYSTEM; CONTROL; APPARATUS; COMPUTER; SYSTEM;
  FILE; SYSTEM; CONTAIN; COMMAND; REGION; PROCESSOR; MAP; FILE; DATA;
  STORAGE; SYSTEM; MAP; DATA; REGION; BASED; MAP; COMMAND; MAP; ARGUMENT
Derwent Class: T01; T03
International Patent Class (Main): G06F-012/00
File Segment: EPI

 15/5/8   **(Item 4 from file: 350)**
DIALOG(R)File 350:Derwent WPIX
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015148487   **Image available**
WPI Acc No: 2003-209014/200320
XRPX Acc No: N03-166570
    Virtual **hard** drive **for computer system, has dynamically expanding**
  file through which client computer performs content write **operations**
  to fixed size file
Patent Assignee: CONNECTIX CORP (CONN-N); CHAKRABORTY P (CHAK-I); GILES A
  (GILE-I); TRAUT E P (TRAU-I)
Inventor: CHAKRABORTY P; GILES A S; TRAUT E P; GILES A
Number of Countries: 100   Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20020147862	A1	20021010	US 2001282111	P	20010407	200320	B
			US 2001918295	A	20010730		
WO 200282262	A2	20021017	WO 2002US10078	A	20020401	200331	
AU 2002338365	A1	20021021	AU 2002338365	A	20020401	200433	

Priority Applications (No Type Date): US 2001282111 P 20010407; US
  2001918295 A 20010730
Patent Details:
Patent No Kind Lan Pg   Main IPC   Filing Notes
US 20020147862 A1   13 G06F-003/00   Provisional application US 2001282111

WO 200282262 A2 E   G06F-009/40

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ
OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA
ZM ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW
AU 2002338365 A1   G06F-009/40   Based on patent WO 200282262

Abstract (Basic): US 20020147862 A1
    NOVELTY - A physical hard drive has a fixed size **file** storing
content of the hard **drive** and a dynamically expanding **file** through
which a client computer performs the content **write** operations to the
fixed size **file** .
    DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the
following:
    (1) computer system;
    (2) write operations performance method;
    (3) undo operation performance method; and
    (4) **virtual** hard **drive** content **synchronization** method.
    USE - For data storage devices such as computer system (claimed)
e.g. personal computer.
    ADVANTAGE - Use of the **differencing** **drive** enable the client
computer to access the data quickly, thereby providing the **virtual**
hard **drive** with improved efficiency and expandable format.
    DESCRIPTION OF DRAWING(S) - The figure shows a flowchart explaining
the write operation performance process.
    pp; 13 DwgNo 1/5
Title Terms: VIRTUAL; HARD; DRIVE; COMPUTER; SYSTEM; DYNAMIC; EXPAND; FILE;
  THROUGH; CLIENT; COMPUTER; PERFORMANCE; CONTENT; WRITING; OPERATE; FIX;
  SIZE; FILE
Derwent Class: T01
International Patent Class (Main): G06F-003/00; G06F-009/40
File Segment: EPI

 15/5/9   (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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012039824   **Image available**
WPI Acc No: 1998-456734/199839
XRPX Acc No: N98-356484
  Processing apparatus for moving virtual **storage resources between
  disk units - generates volume shift processing command to activate
  attribute check section, volume copying section and catalog** modifying
  section for shifting virtual **storage resources to large capacity
  disk unit**
Patent Assignee: FUJITSU LTD (FUIT)
Inventor: HAYASHI K; TAMAKI A
Number of Countries: 002 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5794255	A	19980811	US 94275361	A	19940715	199839	B
			US 96621895	A	19960326		
JP 3315779	B2	20020819	JP 93285455	A	19931116	200261	

Priority Applications (No Type Date): JP 93285455 A 19931116
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5794255	A		13	G06F-017/30	Cont of application US 94275361
JP 3315779	B2		10	G06F-012/00	Previous Publ. patent JP 7141231

Abstract (Basic): US 5794255 A
    The apparatus includes a first disk unit (22) provided for an

external storage system of a computer. The stored contents from the first disk are transferred to a **second** **disk** unit (24) of larger storage capacity. **Virtual** **storage** resources are stored in the data section of the first **disk** unit. A space **map** (50) for managing a number of tracks, is provided in the catalog section (48) of the first disk unit. An attribute check section (40) checks whether the track capacity of the first disk unit and the **second** **disk** unit agree with each other. A volume copying section (42) receives the transfer process instruction from a higher level device when the track capacities are in agreement.

The volume copying section copies the space **map** and the volume of the **virtual** **storage** resources, in the first disk unit. A catalog **modifying** section (44) rewrites the space **map** copied into the **second** **disk** unit. A command generating section of the higher level device, generates a volume shift processing command and activates the attribute check section, the volume copying section and the catalog **modifying** section. The **virtual** **storage** resources of the first **disk** unit are shifted to the **second** **disk** unit.

ADVANTAGE - Enables transfer from small to large capacity disk unit even when contents of volume are **virtual** **storage** resources. Enables rewriting of space **map** corresponding to track capacity at destination.

Dwg.6/7

Title Terms: PROCESS; APPARATUS; MOVE; VIRTUAL; STORAGE; RESOURCE; DISC; UNIT; GENERATE; VOLUME; SHIFT; PROCESS; COMMAND; ACTIVATE; ATTRIBUTE; CHECK; SECTION; VOLUME; COPY; SECTION; CATALOGUE; MODIFIED; SECTION; SHIFT; VIRTUAL; STORAGE; RESOURCE; CAPACITY; DISC; UNIT
Derwent Class: T01
International Patent Class (Main): G06F-012/00; G06F-017/30
File Segment: EPI

 15/5/10   (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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010182315   **Image available**
WPI Acc No: 1995-083568/199512
XRPX Acc No: N95-066264
 Data storage redundancy management system for disk array - has disc array with RAID management system that maps two areas one used for mirror redundancy and another for parity redundancy
Patent Assignee: HEWLETT-PACKARD CO (HEWP)
Inventor: BAIRD R; FORDEMWALT J W; JACOBSON M B; NELSON M D; VAZIRE H; VOIGT D L
Number of Countries: 006 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 639811	A2	19950222	EP 94107148	A	19940506	199512	B
US 5392244	A	19950221	US 93109137	A	19930819	199513	
EP 639811	B1	20030423	EP 94107148	A	19940506	200329	
DE 69432545	E	20030528	DE 632545	A	19940506	200343	
			EP 94107148	A	19940506		

Priority Applications (No Type Date): US 93109137 A 19930819
Cited Patents: No-SR.Pub
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 639811	A2	E	10	G06F-011/10	
Designated States (Regional): DE FR GB IE IT					
US 5392244	A		9	G06F-011/00	
EP 639811	B1	E		G06F-011/10	
Designated States (Regional): DE FR GB IE IT					
DE 69432545	E			G06F-011/10	Based on patent EP 639811

Abstract (Basic): EP 639811 A
        The memory system includes an array of discs in a RAID
    configuration with mirror and parity based areas. The disc array (10)
    has a number of discs (12) and a disc controller (14) to manage access
    to the array.
        A RAID management system (16) arranges for two types of areas on
    the discs. One area is managed as a mirror memory RAID level 1, and the
    other as a parity memory, RAID level 5. The disc management causes
    migration between the two types of area based on some access protocol,
    e.g. more frequently accessed data may be held in the mirror area.
        ADVANTAGE - High performance system. High data availability. Low
    cost system.
        Dwg.4/4
Title Terms: DATA; STORAGE; REDUNDANT; MANAGEMENT; SYSTEM; DISC; ARRAY;
    DISC; ARRAY; RAID; MANAGEMENT; SYSTEM; MAP; TWO; AREA; ONE; MIRROR;
    REDUNDANT; PARITY; REDUNDANT
Derwent Class: T01
International Patent Class (Main): G06F-011/00; G06F-011/10
International Patent Class (Additional): G06F-011/20; G06F-015/02
File Segment: EPI

 15/5/11   (Item 7 from file: 350)

009324829   **Image available**
WPI Acc No: 1993-018293/199302
XRPX Acc No: N93-013932
    **Phantom duplex copy group apparatus for disk drive array data storage
    subsystem** - emulates **operation of large form factor drive using small
    form factor** disks configured into redundancy groups
Patent Assignee: STORAGE TECHNOLOGY CORP (STOS)
Inventor: BELSAN J S; LUDLAM H S; RUDESEAL G A
Number of Countries: 018 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9222865	A1	19921223	WO 92US3653	A	19920501	199302	B
AU 9219268	A	19930112	AU 9219268	A	19920501	199317	
US 5239659	A	19930824	US 91717820	A	19910619	199335	

Priority Applications (No Type Date): US 91717820 A 19910619
Cited Patents: US 4084231; US 4310883; US 4837680; US 4914656; US 4942579;
    US 4989205; US 4989206
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9222865	A1	E	68	G06F-011/16	

    Designated States (National): AU CA JP
    Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LU MC NL SE

AU 9219268	A			G06F-011/16	Based on patent WO 9222865
US 5239659	A		26	G06F-012/16	

Abstract (Basic): WO 9222865 A
        The system comprises a number of disc drives (12*-*), configured
    into redundancy groups (421-428). A control unit (101) receives a
    stream of data records and stores them in available memory space. I/O
    (120) and control and **drive** circuits (121) **write** each of the
    received streams of data records and associated redundancy data in the
    memory.
        A cache stores discs drive data. A host processor (11,12) requests
    activation of duplex copy group capability for primary (401) and
    secondary (402) **virtual** data **storage** devices to **emulate** the
    secondary virtual data **storage** device.
        USE/ADVANTAGE - Data storage subsystems. Provides redundant copies
    of data records for associated host processor. High reliability.

Dwg. 1/10
Title Terms: PHANTOM; DUPLEX; COPY; GROUP; APPARATUS; DISC; DRIVE; ARRAY;
  DATA; STORAGE; SUBSYSTEM; OPERATE; FORM; FACTOR; DRIVE; FORM; FACTOR;
  DISC; CONFIGURATION; REDUNDANT; GROUP
Derwent Class: T01; T03
International Patent Class (Main): G06F-011/16; G06F-012/16
International Patent Class (Additional): G06F-011/80; G06F-013/00
File Segment: EPI

  15/5/12   (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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008736041   **Image available**
WPI Acc No: 1991-240057/199133
XRPX Acc No: N91-183079
  **Data storage method using cache - mapping data into large virtual
  external address space through cache without disturbing logical view of
  data**
Patent Assignee: IBM CORP (IBMC); INT BUSINESS MACHINES CORP (IBMC)
Inventor: BOZMAN G P; EISENBERGE G; LETT A S; MYERS J J; TETZLAFF W H;
  UNGER J H; EISENBERGER G
Number of Countries: 004 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 441508	A	19910814	EP 91300595	A	19910125	199133	B
US 5088026	A	19920211	US 90477704	A	19900209	199209	
EP 441508	A3	19930421	EP 91300595	A	19910125	199401	
EP 441508	B1	19960724	EP 91300595	A	19910125	199634	

Priority Applications (No Type Date): US 90477704 A 19900209
Cited Patents: NoSR.Pub; 2.Jnl.Ref; EP 52370; JP 2116940; JP 62189543; US
  4459658; US 4612612; US 4757447
Patent Details:

Patent No	Kind Lan Pg	Main IPC	Filing Notes
EP 441508	B1 E 10	G06F-012/08	

  Designated States (Regional): DE FR GB

Abstract (Basic): EP 441508 A
     The data accessing method comprises the steps of referencing pages
  in a given file according to their addresses in a linear space as
  mapped into a **virtual** external **storage** address (VESA) and then as
  mapped into a physical address in external **storage** . Referenced pages
  are **written** into the cache using their VESA addresses as indexing
  arguments if not otherwise located in the cache. Then, in response to a
  write request from the processor **updating** in place those cached
  pages common to two **files** , otherwise shadow copying **updated** pages
  into another cache location using another VESA address. The pages are
  written out from the data cache to physical addresses in external
  storage only upon **change** .
     The validity of a page in the cache is maintained as long as the
  VESA address remains unchanged. The system comprises a processor (1)
  having internal storage (3) formed from RAM addressable pages and
  external storage (5) formed from DASD addressable pages. A cache (2) is
  adapted to assign device dependent location in a logical external
  storage space (VF0 and VF1) to pages AV1P0 and AV1P1 to be accessed.
     ADVANTAGE - Reduces problem presented by synonyms. (9pp Dwg.No.1/7
Title Terms: DATA; STORAGE; METHOD; CACHE; MAP; DATA; VIRTUAL; EXTERNAL;
  ADDRESS; SPACE; THROUGH; CACHE; DISTURB; LOGIC; VIEW; DATA
Derwent Class: T01
International Patent Class (Main): G06F-012/08
International Patent Class (Additional): G06F-001/00
File Segment: EPI

DIALOG(R)File 350:Derwent WPIX

008196640   **Image available**
WPI Acc No: 1990-083641/199011
XRPX Acc No: N90-064438
   Emulation of single logical disk drive - using number of disk   drives
   in parallel with synchronised spindles and controller transparent to
   host computer
Patent Assignee: CRAY RES INC (CRAY)
Inventor: HALFORD R J
Number of Countries: 012 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9001737	A	19900222	WO 89US262	A	19890523	199011	B
US 5128810	A	19920707	US 88227367	A	19880802	199230	
			US 91727282	A	19910703		

Priority Applications (No Type Date): US 88227367 A 19880802; US 91727282 A
   19910703
Cited Patents: EP 156724; EP 242121; EP 320107; JP 57197664
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9001737	A	E	31		

   Designated States (National): JP
   Designated States (Regional): AT BE CH DE FR GB IT LU NL SE

Patent No	Kind		Pg	Main IPC	Filing Notes
US 5128810	A		12	G11B-005/09	Cont of application US 88227367

Abstract (Basic): WO 9001737 A
        The multiple disc drive array storage device (103) emulates the
   operation of a single disc drive, so that the handshaking and protocol
   between the array storage device and the most computer (101) appears to
   be that of a single disc drive. The array storage device includes a
   number of individual disc drives (900a-q), each of which has its
   spindle synchronised to a master clock synchronisation.
        Digital data words are received by the controller (108) which
   diodes the words into subparts and writes each subpart, plus a party
   check, to a different disc drive within the array storage device.
   The buffering and formating of the digital data for reading and writing
   is accomplished by the controller, transparent to the most computer.
        USE/ADVANTAGE - High performance computing environment. Large
   capacity, high speed
Title Terms: EMULATION ; SINGLE; LOGIC; DISC; DRIVE; NUMBER; DISC; DRIVE;
   PARALLEL; SYNCHRONISATION; SPINDLE; CONTROL; TRANSPARENT; HOST; COMPUTER
Derwent Class: T01
International Patent Class (Main): G11B-005/09
International Patent Class (Additional): G06F-003/06
File Segment: EPI

DIALOG(R)File 350:Derwent WPIX

004605246
WPI Acc No: 1986-108590/198617
XRPX Acc No: N86-080027
   Dynamically allocated local-global storage system - for multi-processor
   system by assigning first and second   storage portions to reference
   and any other processor respectively
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC); IBM CORP (IBMC)
Inventor: BRANTLEY W C; MCAULIFEE K P; NORTON V A; PFISTER G F; WEISS J
Number of Countries: 007 Number of Patents: 009

```
Patent Family:
Patent No      Kind   Date       Applicat No    Kind   Date       Week
GB 2165975     A      19860423   GB 8525903     A      19851021   198617  B
EP 179401      A      19860430   EP 85113174    A      19851017   198618
CA 1236588     A      19880510                                    198823
CN 8507534     A      19870415                                    198827
US 4754394     A      19880628   US 84664131    A      19841024   198828
GB 2165975     B      19880720                                    198829
US 4980822     A      19901225   US 88168721    A      19880316   199103
EP 179401      B1     19920722   EP 85113174    A      19851017   199230
DE 3586389     G      19920827   DE 3586389     A      19851017   199236
                                 EP 85113174    A      19851017
```

Priority Applications (No Type Date): US 84664131 A 19841024; US 88168721 A
   19880316
Cited Patents: 1.Jnl.Ref; A3...8937; No-SR.Pub; US 3796996; US 3820079
Patent Details:

```
Patent No    Kind Lan Pg    Main IPC      Filing Notes
GB 2165975   A        12
EP 179401    A    E
   Designated States (Regional): DE FR GB IT
EP 179401    B1   E       G06F-012/02
   Designated States (Regional): DE FR GB IT
DE 3586389   G            G06F-012/02   Based on patent EP 179401
```

Abstract (Basic): GB 2165975 B
      A table look-up provides a quantity, the interleave amount, which
   indicates whether the real address is in local or global storage and,
   which in the latter event, is used to derive the absolute addresses.
   The low order bits of the real address may be hashed using Remap (252)
   to introduce a random element into a sequence of consecutive addresses.
   The rear address after mapping excluding the word offset (WO) is passed
   to right rotate device (256) which is controlled by the interleave
   amount.
      The width of the field to be rotated and the amount the field is to
   be rotated are specified by the interleave amount. The derived absolute
   addresses are entered in register (258) and are passed for use onto a
   communication network interconnecting the processors and the storage
   system. Local and global storage is distributed amongst the nodes of a
   multiprocessor network. (12pp Dwg.No.7/8)

```
Set      Items    Description
S1      104195    EMULAT???? OR SIMULAT???? OR (VIRTUAL? OR GUEST)(2W)(PC? ?
                  OR COMPUTER? ? OR SYSTEM? ? OR OS OR ENVIRONMENT)
S2      911823    DRIVE OR DRIVES OR DISK? ? OR DISC? ? OR HARDDRIVE? ? OR H-
                  ARDDISK? ? OR HARDDISC? ? OR STORE? ? OR STORAGE
S3        3631    (VIRTUAL OR EMULAT? OR SIMULAT? OR GUEST)(2W)S2
S4          21    DIFFERENCING(2W)(S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ?
                  OR AREA)
S5       13132    (TEMPORARY OR TRANSIENT OR STAGING)(2W)(S2 OR FILE? ? OR F-
                  OLDER? ? OR PARTITION? ? OR AREA)
S6       77473    (SECOND? OR 2ND OR SUBORDINATE? OR CHILD OR DIFFERENT OR S-
                  EPARATE)(2W)(S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AR-
                  EA)
S7      186461    (WRIT??? OR WRITTEN OR CHANG??? OR DELET???? OR ERAS???? OR
                  UPDAT??? OR EDIT??? OR MODIF???? OR MODIFICATION? ? OR ALTER-
                  ??? OR ALTERATION? ?)(10N)(S2 OR FILE? ? OR FOLDER? ? OR PART-
                  ITION? ? OR AREA)
S8       31033    S2(7N)(SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR -
                  RECONCIL? OR CONFORM? OR MAP????)
S9         951    RAM()(DISK OR DRIVE? ?)
S10         73    (S1 OR S3)(30N)S4:S6(30N)S7(30N)S8
S11         62    S10 AND AC=US/PR
S12         60    S11 AND AY=(1976:2001)/PR
S13         61    S10 AND PY=1976:2001
S14         70    S12:S13
S15         13    S9(10N)(SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR
                  RECONCIL? OR CONFORM? OR MAP????)
```

14/3,K/4   (Item 4 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00994646
Improved disk log using distributed write
Verbesserter Disk-Log mit verteiltem Schreibsystem
Disque-log ameliore avec systeme d'enregistrement reparti
PATENT ASSIGNEE:
   Hewlett-Packard Company, (206030), 3000 Hanover Street, Palo Alto,
      California 94304, (US), (Applicant designated States: all)
INVENTOR:
   Voigt, Douglas L., 3030 N. 24th, Boise, Idaho 83702, (US)
   Burkes, Don L., 3100 San Ramon Dr., Meridian, ID 83642, (US)
   Hanson, Kirk A., 1129 West Newfield Dr., Eagle, Idaho 83616, (US)
LEGAL REPRESENTATIVE:
   Schoppe, Fritz, Dipl.-Ing. (55463), Schoppe, Zimmermann & Stockeler
      Patentanwalte Postfach 71 08 67, 81458 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 899731 A2   990303 (Basic)
                              EP 899731 A3   001011
APPLICATION (CC, No, Date):   EP 98105564 980326;
PRIORITY (CC, No, Date): US 920120 970826
DESIGNATED STATES: DE; GB
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: G11B-019/02; G11B-027/00; G11B-027/10;
   G11B-020/12; G06F-011/14
ABSTRACT WORD COUNT: 253
NOTE:
   Figure number on first page: 2

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:
Available Text   Language   Update   Word Count
      CLAIMS A   (English) 9909   577
      SPEC A   (English) 9909   5730
Total word count - document A   6307
Total word count - document B   0
Total word count - documents A + B   6307

...SPECIFICATION more critical than in the dual controller environment.
   The hierarchic disk array 11 can be characterizable as **different**
storage spaces, including its physical storage space and one or more
virtual storage spaces. For example, storage...

...are related through mapping techniques. For example, the physical
storage space of the disk array can be **mapped** into a virtual storage
space which delineates **storage** areas according to the various data
reliability levels. Some areas within the virtual storage space can be...

...5. These areas may be configured on the same or separate disks or any
combination thereof.
   Data **storage** system 10 includes a memory **map** **store** 21 that
provides for persistent **storage** of the virtual **mapping** information
used to **map** **disk** array 11. The memory **map** **store** is external to
the **disk** array, and preferably resident in the **disk** array controller
14. The memory **mapping** information can be continually or periodically
updated by the controller 14 or RAID management system 16 as the various
mapping configurations among the different views change.
   Preferably, the memory **map** **store** 21 is embodied as two non-volatile
RAMs (Random Access Memory) 21a and 21b which are located...

14/3,K/12   (Item 12 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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...SPECIFICATION than one physical disk drive.
    In a preferred embodiment of this aspect of the present invention, the
emulator further comprises a **second** block **storage   file** , the
address **mapping** routine being capable of alternatively cooperating with
the **second** block **storage   file** to intercede between the native
visual display object file and the real time process control system to
allow communication of the data therebetween. This embodiment of the
present invention therefore allows multiple block **storage   files** to be
used. This may be advantageous when **modifying** the real time plant
control system or when controlling multiple of such systems.
    In still yet another...on a single physical disk drive or span more
than one physical disk drive.
    If the exemplary **emulator** includes more than one block **storage**
file, the address **mapping** routine being capable of alternatively
cooperating with the **second** block **storage   file** to intercede between
the native visual display object file and real time process control
system 100 to allow communication of the data therebetween. This
embodiment allows multiple block **storage   files** to be used which may
be advantageous when **modifying** real time plant control system 100 or
when controlling multiple of such systems.
    Turning now FIGURES 4A...

...CLAIMS said address pointer that corresponds to a particular logical
     block in said block storage file, said block **storage** file and
     address mapping routine thereby substitutable for said mass storage
     device without requiring modifications to said...

...emulator according to Claim 31 wherein said multiasking operating system
     is WINDOWS(R) NT(R).
33. An **emulator** according to Claim 31 or 32 wherein said block storage
     file is stored on a non-native mass storage device (305).
34. An **emulator** according to any of Claims 31 to 33 wherein other
     routines executing in said multiasking operating system are capable
     of using said block **storage** file concurrently with said address
     mapping routine.
35. An **emulator** according to any of Claims 31 to 34 wherein said
     particular logical block is 256 bytes in length.
36. An **emulator** according to any of Claims 31 to 35 wherein said block
     storage file is stored on a single physical disk drive.
37. An **emulator** as according to any of Claims 31 to 36 further
     comprising a second block **storage** **file** , said address **mapping**
     routine being capable of alternatively cooperating with said **second**
     block **storage** **file** to intercede between said native visual
     display object file and said real time process control system (100...
     a native-formatted removable-media mass storage device, executable in
     a non-native, multitasking operating system of **emulating** said mass
     storage device, the method comprising the steps of:
     intercepting an address pointer of a native visual display object...

 14/3,K/13   (Item 13 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2005 European Patent Office. All rts. reserv.

00776325
Methods for using non contiguously reserved storage space for data
     migration in a redundant hierarchic data storage system
Verfahren zur Verwendung von nicht-aneinandergrenzenden reservierten
     Speicherplatz zur Datenmigration in einem hierarchischen redundanten
     Datenspeichersystem
Methode pour l'utilisation d'espace de stockage reserve, non-contign, pour
     migration de donnees dans un systeme de stockage de donnees redondante
     hierarchique
PATENT ASSIGNEE:
  Hewlett-Packard Company, (206030), 3000 Hanover Street, Palo Alto,
     California 94304, (US), (Applicant designated States: all)
INVENTOR:
  Burkes, Theresa A., 3100 San Ramon Drive, Meridian, Idaho 83642, (US)
  Diamond, Bryan M., 9704 Ramsgate, Boise, Idaho 83704, (US)
  Jacobson, Michael B., 8884 Austin, Boise, Idaho 83714, (US)
  Nelson, Marvin D., 9055 Sunflower Lane, Boise, Idaho 83704, (US)
  Voigt, Douglas L., 3030 N. 24th, Boise, Idaho 83702, (US)
LEGAL REPRESENTATIVE:
  Schoppe, Fritz, Dipl.-Ing. (55463), Schoppe, Zimmermann & Stockeler
     Patentanwalte Postfach 71 08 67, 81458 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 726514   A2   960814 (Basic)
                              EP 726514   A3   000223
APPLICATION (CC, No, Date):   EP 95112454 950808;
PRIORITY (CC, No, Date): US 386573 950210
DESIGNATED STATES: DE; FR; GB; IT
INTERNATIONAL PATENT CLASS: G06F-003/06; G06F-011/10; G06F-011/20;
  G11B-020/18
ABSTRACT WORD COUNT: 231
NOTE:
  Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:
Available Text Language   Update   Word Count
    CLAIMS A   (English)   EPAB96   1045
    SPEC A   (English)   EPAB96   8455
Total word count - document A   9500
Total word count - document B   0
Total word count - documents A + B   9500

...SPECIFICATION however, with a single controller or other architectures.
    The hierarchic disk array 11 can be characterized as **different**
storage spaces, including its physical storage space and one or more
virtual storage spaces. These various views...

...are related through mapping techniques. For example, the physical
storage space of the disk array can be **mapped** into a virtual storage
space which delineates **storage** areas according to the various data
reliability levels. Some areas within the virtual storage space can be
...

...The various mapping techniques and virtual spaces concerning RAID
levels are described below in more detail.
    Data **storage** system 10 includes a memory **map**   **store** 21 that
provides for persistent **storage** of the virtual **mapping** information
used to **map**   different **storage** spaces onto one another. The memory
map   **store** is external to the **disk** array, and preferably resident in
the **disk** array controller 14. The memory **mapping** information can be
continually or periodically updated by the controller or RAID management
system as the various mapping configurations among the different views
change.
    Preferably, the memory **map**   **store** 21 is embodied as two
non-volatile RAMs (Random Access Memory) 21a and 21b which are located...

 14/3,K/14   (Item 14 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00776324
**Disk array having hot spare resources and methods for using hot spare
    resources to store user data**
Speicherplattenanordnung mit Ersatzbetriebsmitteln in Betrieb und Verfahren
    zur   Verwendung   von   Ersatzbetriebsmitteln   zum   Speichern   von
    Benutzerdaten
Reseau de disques avec ressources de reserve en fonctionnement et methodes
    pour utiliser les ressources de reserve pour le stockage de donnees
    d'utilisateur
PATENT ASSIGNEE:
  Hewlett-Packard Company, A Delaware Corporation, (3016020), 3000 Hanover
    Street, Palo Alto, CA 94304, (US), (Proprietor designated states: all)
INVENTOR:
  Nelson, Marvin D., 9055 Sunflower Lane, Boise, Idaho 83704, (US)
  Burkes, Theresa A., 3100 San Ramon Drive, Meridian, Idaho 83642, (US)
  Diamond, Bryan M., 9704 Ramsgate, Boise, Idaho 83704, (US)
  Jacobson, Michael B., 8884 Austin, Boise, Idaho 83714, (US)
  Dolphin, Wade A., 7179 Petrie, Boise, Idaho 83704, (US)
  Voigt, Douglas L., 3030 N. 24th, Boise, Idaho 83702, (US)
LEGAL REPRESENTATIVE:
  Schoppe, Fritz, Dipl.-Ing. (55463), Schoppe, Zimmermann, Stockeler &
    Zinkler Patentanwalte Postfach 246, 82043 Pullach bei Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 726521 A2   960814 (Basic)
                              EP 726521 A3   000223
                              EP 726521 B1   031029
APPLICATION (CC, No, Date):   EP 95112336 950804;
PRIORITY (CC, No, Date): US 386574 950210
DESIGNATED STATES: DE; FR; GB

Available Text		Language	Update	Word Count
	CLAIMS A	(English)	EPAB96	928
	CLAIMS B	(English)	200344	985
	CLAIMS B	(German)	200344	933
	CLAIMS B	(French)	200344	1233
	SPEC A	(English)	EPAB96	7267
	SPEC B	(English)	200344	7354
Total word count - document A				8196
Total word count - document B				10505
Total word count - documents A + B				18701

...SPECIFICATION however, with a single controller or other architectures.

   The hierarchic disk array 11 can be characterized as **different**
storage spaces, including its physical storage space and one or more
virtual storage spaces. These various views...

...are related through mapping techniques. For example, the physical
storage space of the disk array can be **mapped** into a virtual storage
space which delineates **storage** areas according to the various data
reliability levels. Some areas within the virtual storage space can be
...

...The various mapping techniques and virtual spaces concerning RAID
levels are described below in more detail.
   Data 'storage** system 10 includes a memory **map**   **store**   21 that
provides for persistent **storage** of the virtual **mapping** information
used to .map**   different **storage** spaces into one another. The memory
map   **store** is external to the **disk** array, and preferably resident in
the **disk** array controller 14. The . memory **mapping** information can be
continually or periodically updated by the controller or RAID management
system as the various mapping configurations · among the different views
change.
   Preferably, the memory **map**   **store** 21 is embodied as two
· non-volatile RAMs (Random Access Memory) 21a and 21b which are located...

RAMs (Random Access Memory) 21a and 21b which are located...

14/3,K/15   (Item 15 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00776323
**Disk array having redundant storage and methods for incrementally
    generating redundancy as data is written to the disk array**
**Speicherplattenanordnung mit redundanter Speicherung und Verfahren zur
    inkrementalen Redundanzerzeugung wahrend des Datenschreibens auf die
    Speicherplattenanordnung**
**Reseau de disques a stockage redondant et methodes pour la generation
    incrementielle de redondance pendant l'ecriture des donnees sur le
    reseau de disques**
PATENT ASSIGNEE:
  Hewlett-Packard Company, A Delaware Corporation, (3016020), 3000 Hanover
    Street, Palo Alto, CA 94304, (US), (Proprietor designated states: all)
INVENTOR:
  Voigt, Douglas L., 3030 N. 24th, Boise, Idaho 83702, (US)
  Nelson, Marvin D., 9500 Sunflower Lane, Boise, Idaho 83704, (US)
LEGAL REPRESENTATIVE:
  Schoppe, Fritz, Dipl.-Ing. (55463), Schoppe, Zimmermann, Stockeler &
    Zinkler Patentanwalte Postfach 246, 82043 Pullach bei Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 726520 A2 960814 (Basic)
                              EP 726520 A3 000329
                              EP 726520 B1 040519
APPLICATION (CC, No, Date):   EP 95112326 950804;
PRIORITY (CC, No, Date): US 386582 950210
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G06F-003/06; G06F-011/10; G06F-011/20;
  G11B-020/18
ABSTRACT WORD COUNT: 254
NOTE:
  Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:
Available Text   Language   Update   Word Count
      CLAIMS A   (English)   EPAB96   982
      CLAIMS B   (English)   200421   708
      CLAIMS B   (German)   200421   709
      CLAIMS B   (French)   200421   898
      SPEC A   (English)   EPAB96   8122
      SPEC B   (English)   200421   8119
Total word count - document A   9105
Total word count - document B   10434
Total word count - documents A + B   19539
...SPECIFICATION however, with a single controller or other architectures.

    The hierarchic disk array 11 can be characterized as **different**
  storage spaces, including its physical storage space and one or more
  virtual storage spaces. These various views...

...are related through mapping techniques. For example, the physical
  storage space of the disk array can be **mapped** into a virtual storage
  space which delineates **storage** areas according to the various data
  reliability levels. Some areas within the virtual storage space can be
  ...

...The various mapping techniques and virtual spaces concerning RAID
  levels are described below in more detail.
    Data **storage** system 10 includes a memory **map** **store** 21 that
  provides for persistent **storage** of the virtual **mapping** information

used to **map** different **storage** spaces into one another. The memory **map** **store** is external to the **disk** array, and preferably resident in the **disk** array controller 14. The memory **mapping** information can be continually or periodically updated by the controller or RAID management system as the various mapping configurations among the different views change.

Preferably, the memory **map** **store** 21 is embodied as two non-volatile RAMs (Random Access Memory) 21a and 21b which are located...

...SPECIFICATION however, with a single controller or other architectures.
The hierarchic disk array 11 can be characterized as **different** storage spaces, including its physical storage space and one or more virtual storage spaces. These various views...

...are related through mapping techniques. For example, the physical storage space of the disk array can be **mapped** into a virtual storage space which delineates **storage** areas according to the various data reliability levels. Some areas within the virtual storage space can be...

...The various mapping techniques and virtual spaces concerning RAID levels are described below in more detail.
Data **storage** system 10 includes a memory **map** **store** 21 that provides for persistent **storage** of the virtual **mapping** information used to **map** different **storage** spaces into one another. The memory **map** **store** is external to the **disk** array, and preferably resident in the **disk** array controller 14. The memory **mapping** information can be continually or periodically updated by the controller or RAID management system as the various mapping configurations among the different views change.

Preferably, the memory **map** **store** 21 is embodied as two non-volatile RAMs (Random Access Memory) 21 a and 21 b which...

14/3,K/16   (Item 16 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00774650
Methods for avoiding overcommitment of virtual capacity in a redundant
    hierarchic data storage system
Verfahren zur Vermeidung der Uber-Zuteilung virtueller Kapazitat in einem
    redundanten hierarchischen Datenspeichersystem
Methode pour eviter l'allocation excessive de capacite virtuelle dans un
    systeme de stockage de donnees a redondance hierarchique
PATENT ASSIGNEE:
  Hewlett-Packard Company, A Delaware Corporation, (3016020), 3000 Hanover
    Street, Palo Alto, CA 94304, (US), (Proprietor designated states: all)
INVENTOR:
  Burkes, Theresa A., 3100 San Ramon Drive, Meridian, Idaho 83642, (US)
  Diamond, Bryan M., 9704 Ramsgate, Boise, Idaho 83704, (US)
  Nelson, Marvin D., 9055 Sunflower Lane, Boise, Idaho 83704, (US)
LEGAL REPRESENTATIVE:
  Schoppe, Fritz, Dipl.-Ing. (55463), Schoppe, Zimmermann, Stockeler &
    Zinkler Patentanwalte Postfach 246, 82043 Pullach bei Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 725324   A2   960807 (Basic)
                              EP 725324   A3   000223
                              EP 725324   B1   050309
APPLICATION (CC, No, Date):   EP 95112325 950804;
PRIORITY (CC, No, Date): US 382350 950201
DESIGNATED STATES: DE; FR; GB; IT
INTERNATIONAL PATENT CLASS: G06F-003/06; G06F-011/10; G06F-011/20;
  G11B-020/18; G06F-012/12
ABSTRACT WORD COUNT: 264
NOTE:
  Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB96	1437
CLAIMS B	(English)	200510	1552
CLAIMS B	(German)	200510	1465
CLAIMS B	(French)	200510	1917
SPEC A	(English)	EPAB96	8887
SPEC B	(English)	200510	9194
Total word count - document A			10325
Total word count - document B			14128
Total word count - documents A + B			24453

...SPECIFICATION however, with a single controller or other architectures.

  The hierarchic disk array 11 can be characterized as **different**
storage spaces, including its physical storage space and one or more
virtual storage spaces. These various views...

...are related through mapping techniques. For example, the physical
storage space of the disk array can be **mapped** into a virtual storage
space which delineates **storage** areas according to the various data
reliability levels. Some areas within the virtual storage space can be
...

...The various mapping techniques and virtual spaces concerning RAID
levels are described below in more detail.
  Data **storage** system 10 includes a memory **map**   **store** 21 that
provides for persistent **storage** of the virtual **mapping** information
used to **map**   different **storage** spaces into one another. The memory
map   **store** is external to the **disk** array, and preferably resident in
the **disk** array controller 14. The memory **mapping** information can be
continually or periodically updated by the controller or RAID management
system as the various mapping configurations among the different views
change.
  Preferably, the memory **map**   **store** 21 is embodied as two
non-volatile RAMs (Random Access Memory) 21a and 21b which are located...

...SPECIFICATION however, with a single controller or other architectures.
  The hierarchic disk array 11 can be characterized as **different**
storage spaces, including its physical storage space and one or more
virtual storage spaces. These various views...

...are related through mapping techniques. For example, the physical
storage space of the disk array can be **mapped** into a virtual storage
space which delineates **storage** areas according to the various data
reliability levels. Some areas within the virtual storage space can be...

...The various mapping techniques and virtual spaces concerning RAID levels
are described below in more detail.
  Data **storage** system 10 includes a memory **map**   **store** 21 that
provides for persistent **storage** of the virtual **mapping** information
used to **map** different **storage** spaces into one another. The memory
map   **store** is external to the **disk** array, and preferably resident in
the **disk** array controller 14. The memory **mapping** information can be
continually or periodically updated by the controller or RAID management
system as the various mapping configurations among the different views
change.
  Preferably, the memory **map**   **store** 21 is embodied ·as two non-volatile
RAMs (Random Access Memory) 21a and 21b which are located...

  14/3,K/30   (Item 30 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00652238
FLASH FILE SYSTEM
SCHNELL LOESCHBARE DATEI
SYSTEME DE MEMOIRE FLASH
PATENT ASSIGNEE:
  M-SYSTEMS LTD., (1849510), P.O.Box 58032, 61580 Tel Aviv, (IL),
    (applicant designated states: DE;FR;GB;IT;NL)
  M-SYSTEMS INC., (1849530), 200 Broadhollow Road, Melville, NY 11747, (US)
  , (applicant designated states: DE;FR;GB;IT;NL)
INVENTOR:
  BAN, Amir, 47 Yehuda Hamaccabi, 62309 Tel Aviv, (IL)
LEGAL REPRESENTATIVE:
  Vossius, Volker, Dr. et al (12524), Dr. Volker Vossius,
    Patentanwaltskanzlei - Rechtsanwaltskanzlei, Holbeinstrasse 5, 81679
    Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 688450 A1 951227 (Basic)
                           EP 688450 B1 981111
                           WO 9420906 940915
APPLICATION (CC, No, Date):   EP 94910145 940228; WO 94US1848 940228
PRIORITY (CC, No, Date): US 27131 930308
DESIGNATED STATES: DE; FR; GB; IT; NL
INTERNATIONAL PATENT CLASS: G06F-012/02; G06F-003/06;
NOTE:
  No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9846	924
CLAIMS B	(German)	9846	873
CLAIMS B	(French)	9846	1019
SPEC B	(English)	9846	4031
Total word count - document A			0
Total word count - document B			6847
Total word count - documents A + B			6847

...CLAIMS virtual map that maps virtual addresses (29) to physical
    addresses (37) within a unit;
  organizing said first **virtual** **map** **stored** in said memory (12) in
    segments of page addressable blocks;
  storing in a random access memory (16...

...of said page addressable blocks in said memory (12),
  changing a page addressable block in said first **virtual** **stored** in
    said memory (12) by **writing** a **changed** page addressable block in
    an unwritten physical block location; and
  updating said **second** **virtual** **map** **stored** in said random access
    memory (16) so that it maps the page address of the changed page...

 14/3,K/32   **(Item 32 from file: 348)**
DIALOG(R)File 348:EUROPEAN PATENTS

00539513
Method and apparatus for extending physical system addressable memory.
Verfahren und Gerat zur Erweiterung von physisch adressierbarem Speicher.
Methode et dispositif pour etendre l'adressage d'une memoire discrete.
PATENT ASSIGNEE:
  International Business Machines Corporation, (200120), Old Orchard Road,
    Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)
INVENTOR:
  Bealkowski, Richard, 1401 Hummingbird Drive, Delray Beach, Florida 33444,
    (US)

LEGAL REPRESENTATIVE:
   Blakemore, Frederick Norman (28381), IBM United Kingdom Limited
      Intellectual Property Department Hursley Park, Winchester Hampshire
      SO21 2JN, (GB)
PATENT (CC, No, Kind, Date): EP 515046 A1 921125 (Basic)
APPLICATION (CC, No, Date): EP 92303836 920428;
PRIORITY (CC, No, Date): US 705277 910524
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G06F-012/08;
ABSTRACT WORD COUNT: 87
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:
Available Text Language   Update   Word Count
      CLAIMS A (English) EPABF1   563
      SPEC A   (English) EPABF1   4029
Total word count - document A   4592
Total word count - document B   0
Total word count - documents A + B   4592

   ...SPECIFICATION controller 400 responds via the Bus Interface 414 to
   memory address references in the range defined for **emulated** RAM
   address space 406. The use of bus interfaces for addressing, control, and
   movement of data are...

   ...the usual disk read or write requests associated with the operation of
   a file system. The secondary **storage** requests 408 are received from the
   I/O bus 230. For ease of illustration, the connection to...

   ...read/writes to distinguish them from read/writes pertaining to the
   emulated RAM address space 406. The **secondary   storage** interface 412
   controls I/O read/writes through the **secondary   storage** manager 418
   under control of the mapping layer and control 416 section of the
   secondary   storage controller 400. The **mapping** layer and control 416
   determines priority of access to the **secondary   storage** 106 when
   requests are simultaneously pending on the bus interface 414 and the
   secondary   storage interface 412. For example, in a multiprocessor
   system, one processor could be attempting an I/O read or write while
   another processor could be attempting to access emulated RAM address
   space 406. The **secondary   storage** manager 418 is responsible for
   controlling data movement to and from the **secondary   storage** 106.
      With proper buffering the actual amount of disk accesses can be reduced
   due to locality of...

   14/3,K/33   (Item 33 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00503368
**LOGICAL TRACK WRITE SCHEDULING SYSTEM FOR A PARALLEL DISK DRIVE ARRAY DATA
      STORAGE SUBSYSTEM**
**LOGISCHES SPURSCHREIBZUORDNUNGSSYSTEM FUR PARALLELES PLATTENLAUFWERKSMATRIX
      DATENSPEICHERUNGSUNTERSYSTEM**
**SYSTEME D'ORDONNANCEMENT D'ECRITURE DE PISTES LOGIQUES POUR UN SOUS-SYSTEME
      DE MEMORISATION DE DONNEES A RESEAU D'UNITES DE DISQUES EN PARALLELE**
PATENT ASSIGNEE:
   STORAGE TECHNOLOGY CORPORATION, (494313), 2270 South 88th Street,
      Louisville, CO 80028, (US), (applicant designated states:
      AT;BE;CH;DE;DK;ES;FR;GB;GR;IT;LI;LU;NL;SE)
INVENTOR:
   MILLIGAN, Charles, Allen, 14300 West 50th Avenue, Golden, CO 80403, (US)
   RUDESEAL, George, Arthur, 1083 Quince Avenue, Boulder, CO 80304, (US)
LEGAL REPRESENTATIVE:
   Goodanew, Martin Eric et al (31082), MATHISEN, MACARA & CO. The Coach
      House 6-8 Swakeleys Road, Ickenham Uxbridge UB10 8BZ, (GB)

PATENT (CC, No, Kind, Date):   EP 526487   A1 930210 (Basic)
                                EP 526487   B1 971008
                                WO 9116711 911031
APPLICATION (CC, No, Date):   EP 91907736 910405; WO 91US2358 910405
PRIORITY (CC, No, Date): US 509484 900416
DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FR; GB; GR; IT; LI; LU; NL; SE
INTERNATIONAL PATENT CLASS: G06F-011/10;
NOTE:
   No A-document published by EPO
LANGUAGE (Publication, Procedural, Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9710W1	2920
CLAIMS B	(German)	9710W1	2610
CLAIMS B	(French)	9710W1	3175
SPEC B	(English)	9710W1	10602
Total word count - document A			0
Total word count - document B			19307
Total word count - documents A + B			19307

...SPECIFICATION the fuzzy image copy to be a complete image copy. This
produces the correct image of the **file** as it was at the end of the most
recent modifications. The use of two alternating memory...

...necessitated by the fact that when a fuzzy image copy is being updated
by the journal of **changes** , the **second** memory **area** **stores** memory
updates occurring during the journal **change** **update** process.
Therefore, for the mapping table backup, the journals are read out of
cache memory 113 and used to **update** the fuzzy image copy of the
mapping tables **stored** on redundancy groups of **disk** **drives** 122. As
a further memory protection arrangement, each **virtual** track instance
stored on the disks in the parallel disk drive array data storage
subsystem 100 is self defining. Each...

 14/3,K/34   (Item 34 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00479977
Data storage using a cache and method therefor
Datenspeicher mit Cache-Speicher und Verfahren dafur
Memoire de donnees avec antememoire et methode afferente
PATENT ASSIGNEE:
   International Business Machines Corporation, (200120), Old Orchard Road,
      Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)
INVENTOR:
   Bozman, Gerald Parks, 609 Ramapo Valley Road, Oakland, New Jersey 07436,
      (US)
   Eisenberger, George, 54 Albemarle Road, White Plains, New York 10605,
      (US)
   Lett, Alexander Stafford, 402 MacGregor Drive, Mahopac, New York 10541,
      (US)
   Myers, James Joseph, 950 Columbus Avenue No.6, San Francisco, CA 94133,
      (US)
   Tetzlaff, William Harold, 37 Fox Den Road, Mount Kisco, New York 10549,
      (US)
   Unger, Jay Harold, Knollwood Court, Mohegan Lake, New York 10547, (US)
LEGAL REPRESENTATIVE:
   Burt, Roger James, Dr. (52152), IBM United Kingdom Limited Intellectual
      Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)
PATENT (CC, No, Kind, Date):   EP 441508   A2 910814 (Basic)
                                EP 441508   A3 930421
                                EP 441508   B1 960724
APPLICATION (CC, No, Date):   EP 91300595 910125;

PRIORITY (CC, No, Date): US 477704 900209
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G06F-012/08;
ABSTRACT WORD COUNT: 100

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:
Available Text   Language   Update   Word Count
       CLAIMS A   (English)   EPABF1   372
       CLAIMS B   (English)   EPAB96   429
      ·CLAIMS B   (German)   EPAB96   475
       CLAIMS B   (French)   EPAB96   502
       SPEC A   (English)   EPABF1   3025
       SPEC B ·   (English)   EPAB96   3076
Total word count - document A   3397
Total word count - document B   4482
Total word count - documents A + B   7879
...SPECIFICATION to the intermediary space is many to one. Thus, two linear
   spaces sharing the same page would **map** to one single **virtual** external
    storage address (VESA) without synonym problems. The use of
   intermediate external storage avoids the synonym problem.
       Referring now...

...bears the logical name File A Version 1 (AV1). It comprises original
   pages 0 and 1. The **second** **file** 31 bears the logical name **File** **A**
   Version 2 (AV2). AV2 includes original page 0 and **modified** page 1 (page
   1'). The pages 0, 1, and 1' are mapped into the VESA addresses (so...

...SPECIFICATION to the intermediary space is many to one. Thus, two
   linear spaces sharing the same page would **map** to one single **virtual**
   external **storage** address (VESA) without synonym problems. The use of
   intermediate external storage avoids the synonym problem.
       Referring now...

...bears the logical name File A Version 1 (AV1). It comprises original
   pages 0 and 1. The **second** **file** 31 bears the logical name **File** **A**
   Version 2 (AV2). AV2 includes original page 0 and **modified** page 1
   (page 1'). The pages 0, 1, and 1' are mapped into the VESA addresses
   (so...·

 14/3,K/35   (Item 35 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2005 European Patent Office. All rts. reserv.

00431885
External sorting using virtual storage.
Externe Sortierung mit Hilfe eines virtuellen Speichers.
Triage externe utilisant une memoire virtuelle.
PATENT ASSIGNEE:
   International Business Machines Corporation, (200120), Old Orchard Road,
      Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB)
INVENTOR:
   Archer, Gary David, 186 Michael Drive, Campbell, CA 95008, (US)
   Case, Douglas Robert, 182 Banff Springs Way, San Jose, CA 95139, (US)
   Wu, Hilda Jya-wei, 7214 Silver Lode Lane, San Jose, CA 95120, (US)
LEGAL REPRESENTATIVE:
   Burt, Roger James, Dr. (52152), IBM United Kingdom Limited Intellectual
      Property Department Hursley Park, Winchester Hampshire SO21 2JN, (GB)
PATENT (CC, No, Kind, Date):   EP 411788   A2   910206 (Basic)
                               EP 411788   A3   920805
APPLICATION (CC, No, Date):   EP 90307840 900718;
PRIORITY (CC, No, Date): US 389243 890802
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: G06F-007/36;

\

...SPECIFICATION are moved to RSAREA based on the sorted pointers.
      (4) Save the address of RSAREA in a **Storage   Map** Table, STGMAP,
and page out the contents to **secondary   storage** .
      (5) Obtain another segment of **virtual   storage** . The size of this
segment is equal to the size of RSAREA, 16 MB in this example...

...until all records in the input file are called, sorted (arranged), moved
to internal (real) memory backed **virtual   storage** , swapped out to
secondary   store , and **virtual   storage** address recorded.
   Note that the process of grouping a number of records before **writing**
them to external **storage** is called "blocking". The blocking process has
to be applied to the records in RSAREA before they...
...may be paged out, they are already in the required format, so to speak.
   Assume that expanded **store** is available:
   (7) Steps (1) - (6) are **modified** such that as the size of virtual
storage GETMAINed and referenced exceeds the size of the real storage,
the least recently used **virtual   storage** pages are paged out to
expanded storage. Also, the RSAREA with the smallest index (I) number
will...

...expanded storage. Since there are 256 MB of expanded storage available,
no pages will be moved to **secondary   storage** .
MERGE Phase
   The file to be sorted was partitioned into 200/16 = 13 subsets or 13
sorted strings. The size of each string is about 16 MB. Each entry   in
the **Storage   Map** Table points to the starting **virtual   storage**
address of a sorted string.
   Using entries in the **Storage   Map** Table to find the first record of
each string, the first record of each string is placed...

...may already be paged out to expanded storage, so they have to be brought
into internal (real) **storage** . INAREA is now used as the output buffer
area. When INAREA is full, the data in INAREA will be **written** to an
output **file** . This process continues until all records are merged to
become one output file.
   In this invention, **virtual   storage** embraces a sort work data set
and is not merely a "sorting area". While using **virtual   storage** as a
"sorting area" may avoid data movements to **secondary   storage** , it
nevertheless is penalized by the fact that a data reference pattern for
typical internal sorting is random and records could potentially be
referenced many times. If the amount of **virtual   storage** is too big
relative to the amount of real storage available, it is very likely that
a...

...to rise, "thrashing" problems might occur.
   A subset of records from each ordered string that had been **mapped**
into **virtual   storage** are merged together. This data may already have
been migrated to either expanded storage or to auxiliary...

...A Comparison
   Ordinarily, external sorts tend to be I/O bound (i.e., reference to
external or **secondary   storage**). This means that most of the elapsed
time of an external sort is usually spent waiting for...

01022565   **Image available**
DATA BACKUP AND RESTORATION USING DYNAMIC VIRTUAL STORAGE
SAUVEGARDE DE SECURITE ET RESTAURATION DE DONNEES FAISANT APPEL A UNE MEMOIRE VIRTUELLE DYNAMIQUE
Patent Applicant/Assignee:
  VOOM TECHNOLOGIES INC, P.O. Box 71, Lakeland, MN 55043-0071, US, US
    (Residence), US (Nationality)
Inventor(s):
  BIESSENER Gaston R, 709 Lawson Avenue East, St. Paul, MN 55106, US,
  BIESSENER David W, 1397 Clippership Alcove, Woodbury, MN 55125, US,
  CHECKY Michael T, 532 Hyde Avenue, Mahtomedi, MN 55115, US,
Legal Representative:
  SIEFFERT Kent J (agent), Shumaker & Sieffert, P.A., 8425 Seasons Parkway,
    Suite 105, St. Paul, MN 55125, US,
Patent and Priority Information (Country, Number, Date):
  Patent: WO 200352604 A1 20030626 (WO 0352604)
  Application: WO 2002US40031 20021211 (PCT/WO US0240031)
  Priority Application: US 200120086 20011214
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
  AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
  EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
  LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SK
  SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
  (EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SI SK
  TR
  (OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
  (AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
  (EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 8436

Fulltext Availability:
  Detailed Description
  Claims

English Abstract
  ...having one or more physical storage devices, and a controller (6)
  coupled to the processor and the **storage** system. The controller
  maintains a virtual **storage   map** (VSM) allocating a primary virtual
  storage (10A) and a **secondary** virtual **storage** (10B) within a
  storage system (8). The controller stores data received from the
  processor prior to a time T0 on the primary virtual storage, **stores**
  data received from the processor after time T0 on the **secondary
  virtual storage** . The controller updates the VSM in response to a save
  command to reallocate the primary **virtual   storage** to include data
  written to the **secondary   virtual   storage** . In this manner, the
  system can backup data in a manner that appears almost instantaneous to
  the...

Detailed Description
.,. organization.

  SUMMARY
  [0005] In general, the invention is directed to a system that makes use
  of dynamic **virtual** storage to save and restore data within a computing
  environment. The system may include a controller that...and the storage
  system. The controller maintains a virtual

include the data written to the secondary **storage** device after TO. 5 1
The method of claim 49, wherein receiving the save command via a
apparatus comprising:
a computer-readable medium to **store** a virtual **storage** **map** (VSM)
allocating a primary virtual **storage** and a **secondary** virtual **storage**
 within a storage system;
an input/output (1/0); and
 a control unit to update the VSM...

...from software executing on a processor within a host computer.

54 A method comprising:
storing a virtual **storage** **map** (VSM) to define a set of **storage**
w-iits for a primary
virtual storage and a **secondary** virtual **storage** ;
storing history data indicating a sequence of save and restore commands;
and storing version data for the storage units of **secondary** virtual
storage , wherein the version data associates one of the commands within
the history data with each of the storage units of the **secondary**
virtual **storage** .

55 The method of claim 54, further comprising:
receiving a save command;
adjusting the VSM in response...

 14/3,K/55   (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00984798   **Image available**
DATA BACKUP METHOD AND SYSTEM USING SNAPSHOT AND VIRTUAL TAPE
PROCEDE ET SYSTEME DE SAUVEGARDE DE DONNEES UTILISANT UNE BANDE INSTANTANEE
    ET VIRTUELLE
Patent Applicant/Assignee:
  SANGATE SYSTEMS INC, 144 Turnpike Road, Southborough, MA 01772, US, US
    (Residence), US (Nationality)
Inventor(s):
  WINOKUR Alexander, Hatisbi Street 108A, 34521 Haifa, IL,
Legal Representative:
  KENNARD Wayne M (et al) (agent), Hale and Dorr LLP, 60 State Street,
    Boston, MA 02109, US,
Patent and Priority Information (Country, Number, Date):
  Patent: WO 200314933 A1 20030220 (WO 0314933)
  Application: WO 2002US24709 20020806 (PCT/WO US0224709)
  Priority Application: US 2001923384 20010808
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
  AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
  EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS
  LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ
  TM TR TT TZ UA UG UZ VN YU ZA ZW
  (EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR
  (OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
  (AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
  (EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 8468

Fulltext Availability:
  Detailed Description
  Claims

1 1 (c-2) if the element has not already been copied, then copying the element to its **mapped** location in the **second** direct access **storage** device.

2 The method of claim I further comprising the act ofduring the iterating act, intercepting a...

...copied, wherein, if such a write command is intercepted, copying the element from the first direct access **storage** device to its **mapped** location in the **second** direct access **storage** device, then executing the write command.

3 The method ...The method of claim I further comprising the act of: storing the set of data into the **second** direct access **storage** device using a second input-output (110) access protocol (SCSIIFC). i 6. The method of claim 5 wherein the **second** **file** access protocol is Open System protocol.

7 The method ...with the one of bits has been copied from the first direct access storage device to the **second** direct access storage device.

14 The method of claim I further comprising:
copying ...the first direct access storage device;
(b) means for mapping destination locations in a second direct access **storage** device for each element of the set, wherein the destination locations are in a sequence
emulating ...means for detern-dning if the each element of the set has already been
copied to the **second** direct access **storage** device; and
(c-2) means for copying the element to its **mapped** location in the **second**
direct access **storage** device if the element has not already been copied.
17 The system of claim 16 further comprising the first direct access **storage** device to its **mapped** location in the **second** direct access **storage** device, then executing the write command.

18 The system of claim 16 further comprising:
means for retrieving...

...The system of claim 16 further comprising:
- 28 means for storing the set of data into the **second** direct access **storage** device using a second input-output (110) protocol.

21 The system of claim 20 wherein the **second** **file** access protocol is Open System protocol.

22 The system of claim 16 further comprising:
means for identifying...

 14/3,K/56   (Item 4 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00948121   **Image available**
METHOD FOR ESTABLISHING A DRIVE IMAGE IN A COMPUTING ENVIRONMENT
PROCEDE PERMETTANT DE CREER UNE IMAGE DE LECTEUR DANS UN ENVIRONNEMENT
    INFORMATIQUE
Patent Applicant/Assignee:
  CONNECTIX CORPORATION, 2955 Campus Drive, Suite 100, San Mateo, CA 94403,
    US, US (Residence), US (Nationality)
Inventor(s):
  TRAUT Eric P, 3 Iris Lane, San Carlos, CA 94070, US,

GILES Aaron S, 1680 Belleville Way, Sunnyvale, CA 94087, US,
CHAKRABORTY Parag, 1600 Villa Street #276, Mountain View, CA 94041, US,
Legal Representative:
  FULGHUM Roger J (agent), Baker Botts L.L.P., One Shell Plaza, 910
    Louisiana, Houston, TX 77002, US,

Fulltext Availability:
  Detailed Description
  Claims

Detailed Description
... by the data of block 50. As such, the location of the blocks in the
    dynamically expanding **file** tracks the sequence the sequence that the
    blocks were written to, rather than tracking the sequence the...of the
    differencing drive, which expands to accommodate writes to the
    differencing drive. Included in the differencing ·**drive** is a bit map for
    identifying the blocks of the virtual hard **drive** that have been
    written to or recorded in the differencing **drive** . The differencing
    drives of the present invention may be cascaded. A differencing drive
    may be added such that the original differencing drive is the parent of
    the newly added differencing **drive** . When the target **drive** for **write**
    operations is switched to the newly added differencing **drive** , the
    content of the original differencing **drive** is fixed and **writes** to the
    virtual hard **drive** by the emulated computer system are made to the
    newly added differencing drive.

    The virtual hard drive...may be maintained at a server computer and each
    of the client computers may include a differencing **drive** that includes
    the **writes** made by the client computer to the parent **drive** of the
    server computer.

    The method disclosed herein is advantageous in that it provides for the
    ...operating system 18 (Figure 1), however, still views drive image 202
    as the hard drive of the **emulated** computer system.

    When the emulated computer system is ...Like a dynamically expanding
    drive, the differencing drive includes a bit map. In the case of a
    differencing **drive** , each bit of the bit map corresponds to one of the
    available blocks of the virtual hard drive. If a bit of the bit map of
    the **differencing** **drive** is a logical 1, the content of the
    corresponding block has been written to and is present in the
    differencing **drive** . If a bit of the bit map of the **differencing**
    drive is a logical 0, the content of the corresponding block either has
    not been written ...to or the content of the corresponding block can be
    found in the parent drive of the **differencing** **drive** . Although the
    differencing **drive** perfonns in many ways like a dynamically expanding
    drive, the **differencing** **drive** can be a complement to either a fixed

drive of an emulated computer system of claim 8, wherein the step of recording the result of the write operation comprises the step of expanding the size of the **file** associated with the differencing **drive** to accommodate the **written** to blocks of the differencing **drive** .

10 The method for performing a **write** operation to the virtual hard **drive** of an emulated computer system of claim 8, further comprising the step of maintaining a bit map...to the emulated computer system to be the hard drive of the
emulated computer system;
performing a **write** operation in the emulated computer system to the hard
 drive of the emulated computer system;
recording the result of the **write** operation in the differencing **drive** of the virtual hard **drive** such that **write** operations performed to the virtual hard **drive** of the host computer system are performed in the differencing drive rather than in the parent drive...computing session.

13 The method for performing an undo operation on a virtual hard drive of an **emulated** computer system of claim 11, wherein the step of prompting the user for a determination comprises the...of the hard drive, synchronizing the content of the hard drive of the emulated computer system by **writing** the content of the differencing **drive** to the content of the parent drive.

15 A virtual hard drive of an emulated computer system...drive of the computer system comprising a
primary differencing drive;
a third file on the physical hard **drive** of the computer system comprising a
secondary differencing **drive** ; and
wherein **write** operations to the virtual hard **drive** are made to the primary differencing drive during a first time interval, the primary differencing recording the **writes** to the virtual hard **drive** and expanding in size to accommodate the content of **write** operations to the virtual hard **drive** during the first time interval;
wherein **write** operations to the virtual hard **drive** are made to the secondary differencing drive during a second time interval, the secondary differencing **drive** recording the writes to the virtual hard **drive** and expanding in size to accommodate **write** operations to the virtual hard **drive** during the second time interval.

16 The virtual hard drive of an emulated computer system of claim...

 14/3,K/57   (Item 5 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00932133
STORAGE VIRTUALIZATION SYSTEM AND METHODS
SYSTEME ET PROCEDES DE VIRTUALISATION DE STOCKAGE
Patent Applicant/Assignee:
  YOTTAYOTTA INC, 10210 NE Points Drive, Suite 300, Kirkland, WA 98033, US,
    US (Residence), US (Nationality), (For all designated states except:
    US)
Patent Applicant/Inventor:
  KARPOFF Wayne T, 678 Estate Drive, Sherwood Park, Alberta T8B 1M4, CA, CA
    (Residence), CA (Nationality), (Designated only for: US)
  LAKE Brian, 10676 Capilano St., Suite 604, Edmonton, Alberta T6A 3R9, CA,
    CA (Residence), CA (Nationality), (Designated only for: US)
Legal Representative:
  GRAY Gerald T (et al) (agent), Townsend and Townsend and Crew LLP, Two
    Embarcadero Center, Eighth Floor, San Francisco, CA 94111, US,
Patent and Priority Information (Country, Number, Date):

Fulltext Availability:
  Detailed Description

Detailed Description
...   to a level of abstraction implemented in software that servers use to
    divide available physical storage into **virtual   disks** or volumes.
    Virtual volumes are used by the Operating System (OS) as if they were
    physical disks. In fact, it is generally impossible for an operating
    system to perceive them as anything but real **disks** . The **Storage**
    Virtualization Layer redirects or **maps** 1/0 requests made against a
    virtual   disk to blocks in real **storage** . This direction/redirection
    means that **changes** in the physical location of **storage** blocks (to
    service access patterns, performance requirements, growth requirements or
    failure recovery) can be accommodated by a simple update of the
    virtual-to-real mappings.

    A virtual volume can be created, expanded, **deleted** , moved and
    selectively presented independent of the **storage** subsystems on which it
    resides. Furthermore, a virtual volume may include storage space in
    different   storage subsystems, each with different characteristics.
    Virtualization architectures will play a key role in solving
    centralization problems, enabling...

 14/3,K/60   (Item 8 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00482051   **Image available**
DATA FILE STORAGE MANAGEMENT SYSTEM FOR SNAPSHOT COPY OPERATIONS
SYSTEME   DE   GESTION   DE   MEMOIRE DE FICHIERS DE DONNEES POUR OPERATIONS DE
    COPIE SELECTIVE

Fulltext Word Count: 16051
Patent and Priority Information (Country, Number, Date):
  Patent: ... **19990318**
Fulltext Availability:
  Detailed Description
Publication Year: **1999**

Detailed Description
... of the snapshot copy operation must wait until the first set of
  mapping table pointers have been **updated** .

  Data **Storage** Subsystem Architecture
  1 0 The present data **file**   **storage** management system for snapshot copy
  operations 106 is implemented in a dynamically **mapped**   **virtual** data
  storage
  subsystem 100 ...data file. This translation of the virtual track
  identification to the logical address corresponding to the physical
  storage location comprises the "dynamically **mapped** virtual" aspect of
  the data **storage** subsystem 100. A cache memory 102 is included in the
  data storage subsystem 1 00 to provide **temporary**   **storage** for data
  files as well as data used by the controller 104. The present data file
  storage...

 14/3,K/70   (**Item 18 from file: 349**)
DIALOG(R)File 349:PCT FULLTEXT
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00168292   **Image available**
SINGLE DISK EMULATION FOR SYNCHRONOUS DISK ARRAY
EMULATION DE DISQUE UNIQUE POUR RESEAU DE DISQUES SYNCHRONES
Patent Applicant/Assignee:
  CRAY RESEARCH INC,
Inventor(s):
  HALFORD Robert J,
Patent and Priority Information (Country, Number, Date):
  Patent: WO 9001737 A1 **19900222**
  Application: WO 89US2262 19890523 (PCT/WO US8902262)
  Priority Application: US 88367 19880802
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
  AT BE CH DE FR GB IT JP LU NL SE
Publication Language: English
Fulltext Word Count: 6148

Patent and Priority Information (Country, Number, Date):
  Patent: ... **19900222**
English Abstract
  A multiple disk drive array storage device is described which **emulates**
  the operation of a single disk drive so that the handshaking and protocol
  between the array storage...

...be that of a single disk drive. The array storage device includes a
  plurality of individual disk **drives** , each of which having its spindle
  synchronized to the other **disk**   **drives** using a master clock
  synchronization . Digital data words are received by the array **storage**
  device controller which divides the words into subparts and **writes** each
  subpart to a **different**   **disk**   **drive** within the **storage** device. The
  buffering and formatting of the digital data for reading and **writing**
  from the individual **disk**   **drives** is accomplished by the controller
  transparent to the host computer.

```
File    8:Ei Compendex(R) 1970-2005/May W5
          (c) 2005 Elsevier Eng.  Info. Inc.
File   35:Dissertation Abs Online 1861-2005/May
          (c) 2005 ProQuest Info&Learning
File   65:Inside Conferences 1993-2005/Jun W1
          (c) 2005 BLDSC all rts. reserv.
File    2:INSPEC 1969-2005/May W5
          (c) 2005 Institution of Electrical Engineers
File   94:JICST-EPlus 1985-2005/Apr W3
          (c)2005 Japan Science and Tech Corp(JST)
File    6:NTIS 1964-2005/May W5
          (c) 2005 NTIS, Intl Cpyrght All Rights Res
File  144:Pascal 1973-2005/May W5
          (c) 2005 INIST/CNRS
File  434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
          (c) 1998 Inst for Sci Info
File   34:SciSearch(R) Cited Ref Sci 1990-2005/May W5
          (c) 2005 Inst for Sci Info
File   99:Wilson Appl. Sci & Tech Abs 1983-2005/May
          (c) 2005 The HW Wilson Co.
File  266:FEDRIP 2005/Jun
          Comp & dist by NTIS, Intl Copyright All Rights Res
File   95:TEME-Technology & Management 1989-2005/May W1
          (c) 2005 FIZ TECHNIK
File  438:Library Lit. & Info. Science 1984-2005/May
          (c) 2005 The HW Wilson Co


Set     Items    Description
S1      3328814    EMULAT???? OR SIMULAT???? OR (VIRTUAL? OR GUEST)(2W)(PC? ?
              OR COMPUTER? ? OR SYSTEM? ? OR OS OR ENVIRONMENT)
S2      3224164    DRIVE OR DRIVES OR DISK? ? OR DISC? ? OR VOLUME? ? OR HARD-
              DRIVE? ? OR HARDDISK? ? OR HARDDISC? ? OR STORE? ? OR STORAGE
S3       15020    (VIRTUAL OR EMULAT? OR SIMULAT? OR GUEST)(2W)S2
S4          32    DIFFERENCING(2W)(S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ?
              OR AREA)
S5        4506    (TEMPORARY OR TRANSIENT OR STAGING)(2W)(S2 OR FILE? ? OR F-
              OLDER? ? OR PARTITION? ? OR AREA)
S6       34957    (SECOND? OR 2ND OR SUBORDINATE? OR CHILD OR DIFFERENT OR S-
              EPARATE)(2W)(S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AR-
              EA)
S7      262852    (WRIT??? OR WRITTEN OR CHANG??? OR DELET???? OR ERAS???? OR
              UPDAT??? OR EDIT??? OR MODIF???? OR MODIFICATION? ? OR ALTER-
              ??? OR ALTERATION? ?)(10N)(S2 OR FILE? ? OR FOLDER? ? OR PART-
              ITION? ? OR AREA)
S8       22570    S2(7N)(SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR -
              RECONCIL? OR CONFORM? OR MAP????)
S9         374    RAM()(DISK OR DRIVE? ?)
S10          1    (S1 OR S3) AND S4:S6 AND S7 AND S8
S11        387    (S1 OR S3) AND S4:S6 AND S7
S12        381    S1 AND S11
S13         22    S3 AND S12
S14         23    S10 OR S13
S15          0    S9(10N)(SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR
              RECONCIL? OR CONFORM? OR MAP????)
S16         18    RD S14 (unique items)
```

16/5/1   (Item 1 from file: 8)

06786254   E.I. No: EIP04148093000
  Title: SFS: A Universal File System Cache for Disconnected FS Operations
  Author: Chang, Henry; Novak, Frank; Tait, Carl; Hortensius, Peter
  Corporate Source: IBM T.J. Watson Research Center, Yorktown Heights, NY
10598, United States
  Conference Title: Joint Conference on Information Sciences - Proceedings,
Abstracts and Summaries '94
  Conference Location: Pinehurst, NC, United States   Conference Date:
19941101-19941101
  E.I. Conference No.: 62516
  Source: Proceedings of the Joint Conference on Information Sciences 1994.
  Publication Year: 1994
  Language: English
  Document Type: CA; (Conference Article)   Treatment: T; (Theoretical)
  Journal Announcement: 0404W1
  Abstract: This paper describes the Shadow File System (SFS), a universal
file system cache manager on OS/2 and Windows that supports operations
involving disconnectable file systems such as network (LAN) file servers,
peer-to-peer file servers and docking station disk drives. SFS is a file
system redirector that intercepts file·system calls to remote file systems.
It provides whole-file caching while connected, and uses cached copies to
simulate remote file system service during periods of disconnection.
Modified files and directories are synchronized at reconnection time;
any conflicting updates ·are reported to the user. We call SFS a
universal file system because it is server-independent. This is a result
of two features of the design. First, SFS is a client-side-only solution;
no changes are required to server code. Second , remote drives are
always accessed through drive letters: any remote file system that exports
a drive to the local PC operating system can be managed by SFS. SFS is
inspired by Coda left bracket Satyanarayanan92, Honeyman93 right bracket .
a disconnection-enabled caching file system. SFS, however, must deal with
issues of consistency, synchronization, and·conflict resolution in a
multi-server, multi-platform PC computing environment. 6 Refs.
  Descriptors: *Mobile telecommunication systems; Client server computer
systems; Local area networks; Multi agent systems; Graphical user
interfaces; Buffer storage ; Computer operating systems; Servers;
Synchronization
  Identifiers: Shadow file systems (SFS); Remote file systems
  Classification Codes:
  722.4 (Digital Computers & Systems); 723.5 (Computer Applications);
722.2 (Computer Peripheral Equipment); 722.1 (Data Storage, Equipment &
Techniques); 731.1 (Control Systems)
  718 ·(Telephone & Other Line Communications); 722 (Computer Hardware);
723 (Computer Software, Data Handling & Applications); 731 (Automatic
Control Principles & Applications)
  71 (ELECTRONICS & COMMUNICATION ENGINEERING); 72 (COMPUTERS & DATA
PROCESSING); 73 (CONTROL ENGINEERING)

  16/5/2   (Item 2 from file: 8)

04743053   E.I. No: EIP97073720660
  Title: Parallel file access for implementing dynamic load balancing on a
massively parallel computer
  Author: Shimizu, Masahisa; Oue, Yasuhiro; Ohnishi, Kazumasa; Kitamura,
Toru
  Corporate Source: Massively Parallel Systems Sanyo Lab, Tokyo, Jpn
  Conference Title: Proceedings of the 1995 International Symposium on
Parallel and Distributed Supercomputing

Conference Location: Fukuoka, Jpn   Conference Date: 19950926-19950928
E.I. Conference No.: 46561
Source: IEICE Transactions on Information and Systems v E80-D n 4 Apr
1997. p 466-472
Publication Year: 1997
CODEN: ITISEF   ISSN: 0916-8532
Language: English
Document Type: JA; (Journal Article)   Treatment: T; (Theoretical)
Journal Announcement: 9708W4
Abstract: Because a massively parallel computer processes vast amounts of
data and generates many access requests from multiple processors
simultaneously, parallel secondary storage requires large capacity and
high concurrency. One effective method of implementation of such secondary
storage is to use disk arrays which have multiple disks connected in
parallel. In this paper, we propose a parallel file access method named
DECODE (dynamic express changing of data entry) in which load balancing
of each disk is achieved by dynamic determination of the write data
position. For resolution of the problem of data fragmentation which is
caused by the relocation of data during a write process, the concept of
`Equivalent Area ' is introduced. We have performed a preliminary
performance evaluation using software simulation under various access
statuses by changing the access pattern, access size and stripe size and
confirmed the effectiveness of load balancing with this method. (Author
abstract) 10 Refs.
Descriptors: *Parallel processing systems; Data acquisition; Computer
software; Computer simulation ; Magnetic disk storage ; File
organization; Storage allocation (computer)
Identifiers: Load balancing; Parallel file access
Classification Codes:
722.4 (Digital Computers & Systems); 723.2 (Data Processing); 723.5
(Computer Applications); 722.1 (Data Storage, Equipment & Techniques)
722 (Computer Hardware); 723 (Computer Software)
72 (COMPUTERS & DATA PROCESSING)

16/5/6   (Item 1 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

779231 ORDER NO: AAD82-11846
VIRTUAL STORAGE **MANAGEMENT IN THE ABSENCE OF REFERENCE BITS**
Author: BABAOGLU, OZALP
Degree: PH.D.
Year: 1981
Corporate Source/Institution: UNIVERSITY OF CALIFORNIA, BERKELEY (0028)
Source: VOLUME 42/12-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
        PAGE 4858. 181 PAGES
Descriptors: COMPUTER SCIENCE
Descriptor Codes: 0984

        Virtual storage management requires a policy to replace data in
primary storage with incoming data from secondary storage . To be
effective, such a policy must select for replacement data that is not going
to be needed in the near future. Having no knowledge about future demands
for data, the replacement policy must anticipate them based on past
demands.
        In most implementations of virtual storage systems , past
demand for data is recorded in a reference bit associated with that data.
These bits can then be examined and/or altered by the replacement policy.
This thesis extends the virtual storage concept to within each storage
hierarchy level. The analysis of such hierarchical replacement policies
confirm their suitability for managing storage hierarchies that lack
reference bits.
        Our preliminary studies are concerned with results that can be
used in the evaluation of virtual storage systems in general. This

includes the development of a program that is capable of synthesizing
certain referencing behaviors in a **virtual   storage** .
        Then, a class of hybrid replacement policies that employ different
algorithms for the management of data in two logical partitions of primary
storage is introduced and analyzed. It is shown that under certain
conditions these hybrid policies incur little additional cost and perform
as if reference bits were available. Trace-driven **simulations** are
conducted to validate the findings of the analytic studies. These indicate
that the conditions under which the hybrid policies exhibit good
performance are rarely satisfied in an actual system.
        As alternatives, the Clock and Sampled Working Set replacement
policies are developed for this environment and shown to perform more
robustly with respect to most variations encountered in a typical system.
        Based on this work the global Clock algorithm is adopted as the
page replacement policy in a **virtual   storage** extension made to the UNIX
operating system. The system runs on the VAX-11/780 computer, which lacks
reference bits.
        Formal models based on inventory control theory are finally
developed to optimize certain policy parameters adopted in the
implementation.

  16/5/7   (Item 1 from file: 2)
DIALOG(R)File   2:INSPEC
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7597848   INSPEC Abstract Number: C2003-05-6110B-042
 Title: A virtual   file   system **for source program** editing
  Author(s): Atsushi, Y.; Naoki, F.
  Author Affiliation: Center for Inf. Sci., Wakayama Univ., Japan
  Conference Title: Ninth Asia-Pacific Software Engineering Conference.
ASPEC 2002   p.176-83
  Editor(s): Strooper, P.; Muenchaisri, P.
  Publisher: IEEE Comput. Soc, Los Alamitos, CA, USA
  Publication Date: 2002   Country of Publication: USA   xvi+612 pp.
  ISBN: 0 7695 1850 8   Material Identity Number: XX-2002-03973
  U.S. Copyright Clearance Center Code: 1530-1362/02/$17.00
  Conference Title: Proceedings Asia-Pacific Software   Engineering
Conference
  Conference Sponsor: Bond Univ.; Distributed Syst. Technol. Centre;
Software Eng. Australia; Queensland Gov. Dept. Innovation & Inf. Economy;
Gold Coast City Council; Griffith Univ.; Latrobe Univ.; Queensland Univ.
Technol.; Swinburne Univ. Technol.; Univ. Melbourne; Univ. New South Wales;
Univ. Queensland; Univ. South Australia
  Conference Date: 4-6 Dec. 2002   Conference Location: Gold Coast, Qld.,
Australia
  Language: English   Document Type: Conference Paper (PA)
  Treatment: Practical (P)
  Abstract: In this paper we propose a **virtual** file **system** , "SPDFS,"
which provides global declarations in source programs as virtual files to
programmers. Global declarations means objects which declare identifiers in
external scope, such as function definition and variable declaration. On
SPDFS, programmers can **edit** virtual **files** directly by their favorite
 editors . **Changes** to declarations in a virtual **file** are to be applied
to real source files automatically. SPDFS can also provide a set of
relevant declarations distributed in **different** source **files** as a
virtual file. Relevancy of declarations in this paper means references
among declarations. SPDFS retrieves declarations which are referred by or
refer to the target declaration and combine them in a virtual file. The
depth of references can be specified in a file path by programmers. SPDFS
reduces the amount of source programs which programmers need to read for
editing and the amount of programmers' works for searching relevant
declarations. We show an implementation of SPDFS using the portal file
system on FreeBSD. The portal file system invokes commands for reading and

writing a virtual **file** respectively. These commands work as user-land process. Because no **modification** of kernel is required, it is easy to customize the behavior of SPDFS. We also show the effectiveness of SPDFS by comparing numbers of lines of source programs which programmers need to read for editing. (15 Refs)

   Subfile: C
   Descriptors: file organisation; software engineering; **virtual   storage**
   Identifiers: **virtual   file   system** ; SPDFS; source programs; virtual files; software development; portal file system
   Class Codes: C6110B (Software engineering techniques); C6120 (File organisation)

   16/5/10   (Item 4 from file: 2)

 Title: A tale of two operating systems
   Author(s): Daney, C.; Foth, T.
   Abstract: The IBM PC XT/370 uses the VM/PC (**virtual** machine/personal **computer**) operating system. VM/PC shares many characteristics with the mainframe operating system known as VM/370. The main thing that these two operating systems have in common is known as CMS (conversational monitor system). The authors focus their comparison of CMS and PC-DOS from Microsoft on three **different** areas: the **file** system, command procedures, and system **modification** and extension. While Microsoft's PC-DOS is always working in your PC XT/370-even if only for I/O (input/output) operations-VM/CMS is invoked only when you are operating as, or networking with, a System/370 mainframe. (0 Refs)
   Subfile: C
   Descriptors: operating systems (computers); **virtual   storage**
   Identifiers: virtual memory; system extension; input/output operations; operating systems; IBM PC XT/370; VM/PC; CMS; conversational monitor system ; PC-DOS; Microsoft; file system; command procedures; system modification; networking
   Class Codes: C6120 (File organisation); C6150J (Operating systems)

Set	Items	Description
S1	728321	EMULAT???? OR SIMULAT???? OR (VIRTUAL? OR GUEST)(2W)(PC? ? OR COMPUTER? ? OR SYSTEM? ? OR OS OR ENVIRONMENT)
S2	8318955	DRIVE OR DRIVES OR DISK? ? OR DISC? ? OR VOLUME? ? OR HARD-DRIVE? ? OR HARDDISK? ? OR HARDDISC? ? OR STORE? ? OR STORAGE
S3	26121	(VIRTUAL OR EMULAT? OR SIMULAT? OR GUEST)(2W)S2
S4	69	DIFFERENCING(2W)(S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AREA)
S5	16840	(TEMPORARY OR TRANSIENT OR STAGING)(2W)(S2 OR FILE? ? OR F-OLDER? ? OR PARTITION? ?, OR AREA)
S6	130286	(SECOND? OR 2ND OR SUBORDINATE? OR CHILD OR DIFFERENT OR S-EPARATE)(2W)(S2 OR FILE? ? OR FOLDER? ? OR PARTITION? ? OR AR-EA)
S7	859788	(WRIT??? OR WRITTEN OR CHANG??? OR DELET???? OR ERAS???? OR UPDAT??? OR EDIT??? OR MODIF???? OR MODIFICATION? ? OR ALTER-??? OR ALTERATION? ?)(10N)(S2 OR FILE? ? OR FOLDER? ? OR PART-ITION? ? OR AREA)
S8	43616	S2(7N)(SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR -RECONCIL? OR CONFORM? OR MAP????)
S9	7164	RAM()(DISK OR DRIVE? ?)
S10	7	S3(50N)S4
S11	5	RD (unique items)
S12	19	(S1 OR S3)(30N)S4:S6(30N)S7(30N)S8
S13	31	S9(10N)(SYNC??? OR SYNCHRONIZ?????? OR SYNCHRONIS?????? OR RECONCIL? OR CONFORM? OR MAP????)
S14	50	S12:S13
S15	37	RD (unique items)
S16	36	S15 NOT PY=2002:2005

16/3,K/1   (Item 1 from file: 275)

01782537   SUPPLIER NUMBER: 16626761   (USE FORMAT 7 OR 9 FOR FULL TEXT)
Corel CD Creator: let there be CDs. (Software Review) (Evaluation)
Karney, James
PC Magazine, v14, n5, p40(1)
March 14, 1995
DOCUMENT TYPE: Evaluation   ISSN: 0888-8507   LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT
WORD COUNT: 952   LINE COUNT: 00071

...ABSTRACT: free space left on the target disk and how much hard disk
space will be needed for **temporary   files** . CD Creator has some
significant limitations; there are no **simulation** utilities to show what
the CD will look like before actual recording takes place. Users can save
. . .

...a CD-Digital Audio drive for producing digital audio CDs and large
amounts of memory and hard **disk** space. The software **conforms** to the
standardized ISO-9660 CD-ROM format and can be used for file copying.
Cutting a...

 16/3,K/2   (Item 2 from file: 275)

01581233   SUPPLIER NUMBER: 13085423   (USE FORMAT 7 OR 9 FOR FULL TEXT)
**Utilities put the power in PBs. (PowerBook utility collections) (Product
  Watch)**
Waltz, Mitzi
MacWEEK, v7, n1, p142(1)
Jan 4, 1993
ISSN: 0892-8118   LANGUAGE: ENGLISH   RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 821   LINE COUNT: 00066

...   capability to run screen-saver modules compatible with Berkeley
Systems Inc.'s After Dark; PowerSync, a data- **synchronization** utility; and
PowerStart, a **RAM   disk** utility. These three utilities also will be
available as a combination package, tentatively titled The Power Suite...

 16/3,K/3   (Item 3 from file: 275)

01564204   SUPPLIER NUMBER: 13085199
**Norton Essentials overcome PB limitations: NEP keeps PBs charged and in
  sync. (Software Review) (Norton Essentials for PowerBook)(includes
  related summary article) (Evaluation)**
Coleman, Dale
MacWEEK, v7, n1, p107(3)
Jan 4, 1993
DOCUMENT TYPE: Evaluation   ISSN: 0892-8118   LANGUAGE: ENGLISH
RECORD TYPE: ABSTRACT

...ABSTRACT: folders to be synchronized as a named set that is added to a
menu. A very small **RAM   disk** can be kept **synchronized** to the hard disk
to conserve power on a 4Mbyte PowerBook, and an 'Airport Shut Down' feature
. . .

 16/3,K/4   (Item 4 from file: 275)

01523452   SUPPLIER NUMBER: 12298916   (USE FORMAT 7 OR 9 FOR FULL TEXT)
**New pared-down PowerBook will draw on Newton. (borrows heavily from Newton
    personal digital assistant technology) (Apple previews notebook computer
    aimed at consumer market) (Brief Article)**
Ratcliffe, Mitch
MacWEEK, v6, n25, p1(2)
June 29, 1992
DOCUMENT TYPE: Brief Article   ISSN: 0892-8118   LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT
WORD COUNT: 686   LINE COUNT: 00055

...   An application will copy files back and forth to help keep data on
the mobile Mac in **sync** with the user's desktop machine.
       > **RAM**   **disk** software. Unlike the RAM disk in Apple's Memory control
panel, PowerBoost's will automatically copy files...

 16/3,K/5   (Item 5 from file: 275)

01509951   SUPPLIER NUMBER: 12076722   (USE FORMAT 7 OR 9 FOR FULL TEXT)
**The Macintosh: the choice for graphics. (Apple Macintosh Quadra 700)
    (Hardware Review) (one of four evaluations of microcomputers in
    'Platforms: How the PC Stacks Up')(cover story) (Evaluation)**
Zilber, Jon
PC Magazine, v11, n9, p127(3)
May 12, 1992
DOCUMENT TYPE: Evaluation   ISSN: 0888-8507   LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 2079   LINE COUNT: 00163

...   copy of that file. Aliasing lets you have multiple references to
the same document or application in **different**   **folders** , or even on
different machines. It takes no additional **storage** space and frees you
from having to **reconcile**   **changes** made to multiple copies of a document.
    For PC connectivity, Macs ship with a standard floppy disk...

...a Mac-like on-screen representation of files on DOS hard disks. In
addition, third-party DOS **emulators** are available; hardware solutions
include Orange Micro's Orange-386 MS-DOS coprocessor, and software
solutions include...

 16/3,K/6   (Item 6 from file: 275)

01499780   SUPPLIER NUMBER: 11978275   (USE FORMAT 7 OR 9 FOR FULL TEXT)
**Solving problems: taming RAM disks on networks, database reports, and
    memo-field spell checking. (Set Expert On) (Column)**
Olympia, P.L.
DBMS, v5, n3, p86(2)
March, 1992
DOCUMENT TYPE: Column   ISSN: 1041-5173   LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 1797   LINE COUNT: 00134

...   RAM disk is drive G. The installation's network standard,
unfortunately, calls for drive G to be **mapped** to the network email
software directory. Thus, I "lose" the **RAM**   **disk** as soon as I log into
the network.

The solution to these problems comes in the form...

 16/3,K/7   (Item 7 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01493947   SUPPLIER NUMBER: 11716344   (USE FORMAT 7 OR 9 FOR FULL TEXT)
Capital Equipment Corp.: Capital OS/RAM 32, Capital OS/RAM 32 Plus.
   (Hardware Review) (one of 9 evaluations of memory boards in 'MCA Memory
   Boards: Expansion Without Delay') (Evaluation)
Rosch, Winn L.
PC Magazine, v11, n2, p229(2)
Jan 28, 1992
DOCUMENT TYPE: Evaluation   ISSN: 0888-8507   LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 750   LINE COUNT: 00055

 ...   RAM cache.
     Included with the setup program are EMS and XMS driver software,
diagnostics, and utilities (the RAM   disk and a memory and I/O mapping
program). The boards are protected by a two-year warranty in an arena where
many of the...

 16/3,K/8   (Item 8 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01456419   SUPPLIER NUMBER: 11452302   (USE FORMAT 7 OR 9 FOR FULL TEXT)
QuickSCSI picks up a little speed for the Mac; PLI's NuBus card is latest
   contender. (includes a related article summarizing the review) (Hardware
   Review) (evaluation)
Magorian, Dan
MacWEEK, v5, n37, p37(2)
Oct 29, 1991
DOCUMENT TYPE: evaluation   ISSN: 0892-8118   LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 1254   LINE COUNT: 00097

 ...   programs have essentially the same functionality as PLI's
TurboDrive formatter.
     The manager is used most to change the start-up device or
force-mount drives that don't show up on the desktop. It also has the
interface to QuickSCSI's second main feature: drive mirroring.
     This lets you automatically write all data to a second   drive at
almost the same time as the first, providing a continuous backup. We tried
this and it...

...beyond backup by providing automatic error recovery, and at least tries
to handle problems gracefully. If you simulate a crash by turning off
QuickSCSI's primary mirrored disk in midoperation, the Mac crashes and the
two disks have to be re- synced by turning off mirroring and cloning one
from the other, a tedious operation that could take a...

...system is unusable). This is not discussed in the bare-bones
documentation.
     Considering the cost of the second   disk and the infrequency of
crashes, most sites probably will use one of the popular new digital audio
...

 16/3,K/9   (Item 9 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01452768   SUPPLIER NUMBER: 11080351   (USE FORMAT 7 OR 9 FOR FULL TEXT)
Fresh Technology releases MAP Assist version 3.0. (Fresh Technology Co.'s
  network software) (product announcement)
LAN Computing, v2, n14, p27(1)
August, 1991
DOCUMENT TYPE: product announcement   ISSN: 1055-1808   LANGUAGE:
  ENGLISH   RECORD TYPE: FULLTEXT
WORD COUNT: 141   LINE COUNT: 00011

...   applications, copy files, and edit data on other workstations'
local drives. Hard drives, CDROMs, WORMs, floppy and **RAM** drives all can
be shared among **MAP** Assist users.
      With **MAP** Assist, prices at $349, users can back up another
workstation's local drives without having to move...

 16/3,K/10   (Item 10 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01436466   SUPPLIER NUMBER: 10897126   (USE FORMAT 7 OR 9 FOR FULL TEXT)
Micro Palm announces the PC/3000. (Micro Palm Computers Inc.'s hand-held
  computer) (product announcement)
Computing Canada, v17, n12, p55(1)
June 6, 1991
DOCUMENT TYPE: product announcement   ISSN: 0319-0161   LANGUAGE:
  ENGLISH   RECORD TYPE: FULLTEXT
WORD COUNT: 247   LINE COUNT: 00019

...   PC/3000 has 512K RAM standard and is expandable to a total of eight
MB. Users can **map** the available memory to system or **RAM** disk to
provide the optimum operating environment for their application. All memory
is non-volatile (supported by a...

 16/3,K/11   (Item 11 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01417764   SUPPLIER NUMBER: 09380026   (USE FORMAT 7 OR 9 FOR FULL TEXT)
Opening up your Windows: WinSleuth 1.0. (Software Review) (Microsoft
  Windows-environment diagnostic software from Dariana Technology Group
  Inc.) (evaluation)
Brenesal, Barry
PC Sources, v2, n2, p351(1)
Feb, 1991
DOCUMENT TYPE: evaluation   ISSN: 1052-6579   LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 829   LINE COUNT: 00067

...   drive mapping, and that it should be fixed by the time this review
appears.
      The poor drive **mapping** resulted in yet another problem. Although I
had added the **RAM** drive to my CONFIG.SYS file, I had not allocated any
memory to it (not loading any memory...

 16/3,K/12   (Item 12 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01378813   SUPPLIER NUMBER: 09573067   (USE FORMAT 7 OR 9 FOR FULL TEXT)
DDE holds promise, but has a way to go. (Dynamic Data Exchange)
PC Week, v7, n44, p123(4)

Nov 5, 1990
ISSN: 0740-1604   LANGUAGE: ENGLISH   RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 2664   LINE COUNT: 00207

...   a character limit somewhere between 9,500 and 10,100 in the
configuration tested.
     There are also **file** -management problems that have to be addressed.
Routine **changes** such as moving source **files** to different directories or
changing source **file** names means losing the DDE link. The only way to
maintain the link is to update the...

...field code to reflect the change -- not exactly a transparent process.
And in a network environment, where **drives** are **mapped** to **different**
virtual **drive** letters, link management can quickly become a nightmare.
It is difficult to imagine a resolution to this...

...any file information-management facilities. Any future progress will
likely depend on a linked DDE database or **file** manager that can track all
changes and make the appropriate **updates** .
     Finally, these tests, running on a relatively fast system, found DDE
to be a slow and tedious...

 16/3,K/13   (Item 13 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01364145   SUPPLIER NUMBER: 08648546   (USE FORMAT 7 OR 9 FOR FULL TEXT)
Micro channel memory boards. (buyers guide)
Brazeau, Robin A.
PC Week, v7, n28, p92(1)
July 16, 1990
DOCUMENT TYPE: buyers guide   ISSN: 0740-1604   LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT
WORD COUNT: 1891   LINE COUNT: 00160

...   Size of memory chips; d,s: 256K bytes or 1M byte; SIMMs.
     System utilities: software, print spooler, **RAM** **disk** , diagnostics,
PCMAP (memory and I/O **mapping** utility).
     Price; warranty: $299; 2 years.
     -----#-----
     Vendor: Capital Equipment Corp..
     Product: OS/RAM4, OS/RAM8.
     Shipping date...

...chips: 100 ns.
     Size of memory chips; d,s: 1M byte; SIMMs.
     System utilities: software, print spooler, **RAM** **disk** , diagnostics,
PCMAP (memory and I/O **mapping** utility).
     Price; warranty: $225 (RAM4), $375 (RAM8); 2 years.
     -----#-----
     Vendor: Computer Elektronik Infosys of America Inc..
     Product...

 16/3,K/14   (Item 14 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01315469   SUPPLIER NUMBER: 07918810   (USE FORMAT 7 OR 9 FOR FULL TEXT)
Micro Channel memory boards. (memory and multifunction board product table)
   (buyers guide)
Brazeau, Robin
PC Week, v6, n47, p95(1)
Nov 27, 1989

```
          Price: $320.
          -----#-----
          Vendor: Tecmar.
          Product: MicroRAM 386.
          Type of board: expanded/extended with...

   ...512K; 10, 16, 20 or 25MHz.
          Board specifications: full-sized; 1 slot.
          System utilities: software, print spooler,  **RAM   disk** , diagnostics.
          Features: 1 memory- **mapping**  register set; network compatible;
   switchless configuration.
          Price: $390.
          -----#-----...
```

 16/3,K/15   (Item 15 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01311327   SUPPLIER NUMBER: 07736638   (USE FORMAT 7 OR 9 FOR FULL TEXT)
IBM's ECF route to the host. (Enhanced Connectivity Facility)
Moran, Pat
Tech PC User, v1, n9, p38(6)
May, 1989
ISSN: 0954-6995   LANGUAGE: ENGLISH   RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 5051   LINE COUNT: 00378

```
   ...      For example, the ECF command
       VDISK START D: HF(FORMS) A(W)
       will map the PC-DOS  drive  D: to the host file called FORMS and
   requests write access to the file so that the  virtual   disk  can be
   changed.  On completion of this command, all references to  drive  D: are
   mapped  to the DOS  disk  held in the host file called FORMS.
          The main advantages that  virtual   disks  offer are the ability for
   many users to share access to a disk, so a read-only...

   ...supply a library of standard letters or forms for use by secretaries.
   The other advantage is that  1virtual   disks  can be backed up using the
   host's standard backup without relying on or requiring any action by the PC
   user.
          Virtual
          Files
          Virtual files differ from  virtual   disks  in that each PC virtual
   file is  mapped  to a  separate  host  file , which is  stored  in host
   file format and only appears to the PC application as if it were in PC...
```

 16/3,K/16   (Item 16 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01293104   SUPPLIER NUMBER: 07234292   (USE FORMAT 7 OR 9 FOR FULL TEXT)
**EMS boards for AT bus machines. (memory and multifunction boards product
  table) (buyers guide)**
Papa, Doreen M.
PC Week, v6, n17, p108(1)
May 1, 1989
DOCUMENT TYPE: buyers guide   ISSN: 0740-1604   LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT
WORD COUNT: 2083   LINE COUNT: 00210

```
   ...      and 1 parallel port; 1 slot.
          System compatibility: OS/2, Unix, Xenix, NetWare.
          System utilities: print spooler;  RAM   disk .
          Additional features: 32  mapping  register sets; back-filing
```

...sized; 1 slot.
     System compatibility: PCMOS, Concurrent DOS, OS/2, Unix, Xenix,
NetWare.
     System utilities: print spooler; **RAM disk** ; diagnostics.
     Additional features: zero-wait station supported; 1 **mapping**
register set; allows upgrading in 1M-byte increments; back-filing
capability.
     Price; warranty: $725 (2M bytes).
     -----#-----
     Vendor...

...sized; 1 slot.
     System compatibility: PCMOS, Concurrent DOS, OS/2, Unix, Xenix,
NetWare.
     System utilities: print spooler; **RAM disk** ; diagnostics.
     Additional features: zero-wait station supported; 1 **mapping**
register set; back-filing capability, software driver and utilities are
compatible with the Intel Above Board.
     Price...

...and 1 parallel port; 1 slot.
     System compatibility: OS/2, Unix, Xenix, NetWare.
     System utilities: print spooler; **RAM disk** ; diagnostics.
     Additional features: zero-wait station supported; 1 **mapping**
register set; back-filing capability; switchless, jumpless set-up;
installation program included.
     Price; warranty: $399 (OK bytes...

...10/12MHz.
     Board Specifications: full sized; 1 slot.
     System compatibility: OS/2, Unix, Xenix, NetWare.
     System utilities: **RAM disk** ; diagnostics.
     Additional features: zero-wait station supported; 2048 **mapping**
register sets; back-filing capability; autoROM option for auto-installation
under protected mode operating systems.
     Price; warranty...

...16/20MHz.
     Board Specifications: full sized; 1 slot.
     System compatibility: OS/2, Unix, Xenix, NetWare.
     System utilities: **RAM disk** ; diagnostics.
     Additional features: zero-wait station supported; 2048 **mapping**
register sets; back-filing capability; autoROM option for auto-installation
under protected mode operating systems; AutoSLOT feature...

...Board Specifications: full sized; 1 slot.
     System compatibility: OS/2, Unix, Xenix, NetWare.
     System utilities: print spooler; **RAM disk** .
     Additional features: zero-wait station supported; 2 **mapping**
register sets; back-filing capability; utility to display EMS
configuration.
     Price; warranty: $99.
     -----#-----
     Vendor: STB Systems Inc...

 16/3,K/17   (Item 17 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01289560   SUPPLIER NUMBER: 07126822   (USE FORMAT 7 OR 9 FOR FULL TEXT)
**Drawing out DESQview power. (Quarterback Office Systems' DESQview
  application program interface)**
Hitt, Frederick J.

PC Tech Journal, v7, n4, p46(12)
April, 1989
ISSN: 0738-0194   LANGUAGE: ENGLISH   RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 8352 · LINE COUNT: 00676

...   code from conventional to expanded memory through the page frame
offers no advantage over swapping to a **RAM   disk** in expanded or extended
memory.
     Whether **mapping** processes into disjointed EMS blocks or stacking
them in physical DOS memory, DESQview ensures that no process...

 16/3,K/18   (Item 18 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01244616   SUPPLIER NUMBER: 06692043   (USE FORMAT 7 OR 9 FOR FULL TEXT)
**Intel Corporation. (Hardware Review) (one of three PC accelerator board
   evaluations in 'The souped-up PC') (evaluation)**
Hoffman, Thomas V.
PC Tech Journal, v6, n6, p117(2)
June, 1988
DOCUMENT TYPE: evaluation   ISSN: 0738-0194   LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 608   LINE COUNT: 00047

...ABSTRACT: 386-PC runs in real mode at full speed by default, but cannot
access extended memory or **map** the ROMs into 32-bit **RAM** . **Disk** caching
software is bundled with the Inboard 386-PC, which exhibited no
compatibility problems.

 16/3,K/19   (Item 19 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01152698   SUPPLIER NUMBER: 00594865   (USE FORMAT 7 OR 9 FOR FULL TEXT)
Orchid PCnet.
Webster, R.; Rosch, W.L.
PC Magazine, v4, n3, p229
Feb. 5, 1985
DOCUMENT TYPE: evaluaton   ISSN: 0888-8507   LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 3169   LINE COUNT: 00241

...   is to be. You have three practical choices: public read-only,
public read-write, and private read- **write** . (Although you can have a
private read-only **volume** , that choice is not useful.)
     After the various volumes are created, they must be assigned to the
workstations that are to use them, a process called " **mapping** ." To the
individual user PC, each **volume** appears as a **separate   disk   drive**
with its own, DOS-assigned **drive** letter. These driver letters are then
mapped to correspond to specific **volumes** on the server PC, using a
program called UPCINST. Orchid and Application
     PCnet allows individual workstations to...

...most part, running these programs on the network is easy--you need only
load them from the **virtual   disk** corresponding to the public volume of
the server on which they are located. Save for the absence...

 16/3,K/20   (Item 20 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01117904   SUPPLIER NUMBER: 00610307
Review of 'ThunderScan'.
Storrie-Lombardi, L.; Storrie-Lombardi, M.
Call-A.P.P.L.E., v8, n4, p29-30
April, 1985
DOCUMENT TYPE: evaluaton   ISSN: 8755-4909   LANGUAGE: ENGLISH
RECORD TYPE: ABSTRACT

...ABSTRACT: limited print quality and slow speed. These limitations might
be overcome with a 512K Mac and a **RAM disk** and-or hard disk.
ThunderScan **conforms** very well to the Macintosh conventions. It costs
$229.00.

 16/3,K/21   (Item 1 from file: 621)
DIALOG(R)File 621:Gale Group New Prod.Annou.(R)
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01164289   Supplier Number: 42107603   (USE FORMAT 7 FOR FULLTEXT)
SDC INTRODUCES Series 400 CACHING CONTROLLERS
News Release, p1
May 29, 1991
Language: English   Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 1208

...   operating systems. For example, UNIX and Xenix enable SCSI-
    model users to configure systems in which the **second hard drive**
    exceeds 504MB -- as long as the first **drive   conforms** to WD-1003
     emulation requirements. Optional drivers, available mid-year, will
    allow up to seven SCSI devices of 1.8GB each...

...and 4.0,
    QNX, PICK and OS/2.

    In addition, the Series 400 features as an option **disk** mirroring,
    which **writes** data concurrently to two paired **drives**
. This creates a
    fault-tolerant, parallel-storage system that protects against
    critical data loss should one drive...

 16/3,K/22   (Item 2 from file: 621)
DIALOG(R)File 621:Gale Group New Prod.Annou.(R)
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01158893   Supplier Number: 41965756   (USE FORMAT 7 FOR FULLTEXT)
Full PC Compatibility in the Palm of your hand! The New Micro Palm PC/3000
News Release, p1
April, 1991
Language: English   Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 470

...   The PC/3000 has 512KB RAM standard and is expandable to a total of
    8MB. Users can **map** the available memory to system or **RAM   disk** to
    rovide the optimum operatin environment for their application. All
    memory is non-volatile (supported by a...

 16/3,K/23   (Item 3 from file: 621)
DIALOG(R)File 621:Gale Group New Prod.Annou.(R)
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01023323   Supplier Number: 39713897   (USE FORMAT 7 FOR FULLTEXT)

MAXITRON NEW PRODUCT INTRODUCTIONS AT THE APRIL IPC CONFERENCE
PR Newswire, pN/A
March 12, 1986
Language: English   Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 1026

...   System, OASIS open
    architecture product family, a new MAP module compatible with the MAP
    2.1 specification (**MAP** -001), a Data PC (DPC 67-20), a **RAM   disk**
 memory
    expansion module (MSM-256), an IBM compatible workstation (T 1607),
    enhanced IBM compatible programming software, and...

 16/3,K/24   (Item 4 from file: 621)
DIALOG(R)File 621:Gale Group New Prod.Annou.(R)
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01011232   Supplier Number: 39603511   (USE FORMAT 7 FOR FULLTEXT)
TWO DISK SUB-SYSTEMS INTRODUCED BY MDB
PR Newswire, pN/A
Oct, 1985
Language: English   Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 288

...   of 188 MBytes. The MLSI-RM11 controller manufactured by
    MDB, and supplied with the sub-system allows   **emulation**
 of two logical
    RM03 drives, thereby providing 134 MBytes total of disk storage
    space. The drive has...

...second unit utilizes the Fujitsu M2333K drive that has a data
    transfer rate of 2.1 Megabits/ **second** . Unformatted **storage**
 capacity
    of 337 MBytes is **mapped** to 256 MBytes by use of RM05 **emulation**
 . The
    MLSI DK11-RM high speed SMD controller provides hardware and software
    ECC with vertical or horizontal...
...The DK11
    controller also has the provision for direct mapping, in the event
    the user wishes to **write** his own driver and utilize greater **disk**
     storage
 capacity. The DK11 disk controller has all parameters of the
    controller and **disk   drive** established and/or **changed**
 under software
    via the operators console. This unit, designated the MLSI-2333, has
    a list price of...

 16/3,K/25   (Item 5 from file: 621)
DIALOG(R)File 621:Gale Group New Prod.Annou.(R)
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01003507   Supplier Number: 39527713   (USE FORMAT 7 FOR FULLTEXT)
15MHz UNIBUS SMD CONTROLLERS INTRODUCED BY MDB SYSTEMS, INC
PR Newswire, pN/A
May 17, 1985
Language: English   Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 561

...   used, thereby retaining
    software compatibility with DEC systems.

The MDB-DK11-RM provides RM80, RM02, or RM05 **emulation**
modes, and the
MDB-DK11-RP provides RP08 emulation, making them transparent to most
DEC operating systems...

...and/or emulations.
A key ieature of the controllers' capabilities is the method used for
drive address **mapping** . An on-board **Disk** Address Translator (DAT)
provides the method to allow attachment of different configuration
SMD **disk**   **drives** to the controller, without requiring **modification**
of
system software drivers or the main controller firmware. The DAT
uses a drive attribute pROM and...

...address as supplied by the
RM02/RM05 or Rp08 software drivers to addresses compatible with the
attached **drive** . Either horizontal or vertical **mapping** may be
selected when **mapping** two logicals per physical **drive** .
An extended direct **disk**   **mapping**
mode is available for users who wish
to use large **storage** capacity **drives** (gigabyte capacities) and
write
their own drivers. This mode allows direct mapping onto the **disk**
where there is a one to one correspondence with cylinder, head, and
sector addresses for the software...

16/3,K/26   (Item 1 from file: 636)
DIALOG(R)File 636:Gale Group Newsletter DB(TM)
(c) 2005 The Gale Group. All rts. reserv.

03694348   Supplier Number: 47969818   (USE FORMAT 7 FOR FULLTEXT)
Dataquest: DVD+RW: Sony, Philips, and HP finally make the official
  announcement
M2 Presswire, pN/A
Sept 10, 1997
Language: English   Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 937

...   Hitachi Ltd. and Matsushita Electric Industrial Co.(MEI) separately
announced plans on April 23 to launch DVD- **RAM**   **drives** , which **conform**
to that format. Hitachi received much of the credit for facilitating the
fusion of the two different...

16/3,K/27   (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2005 The Gale Group. All rts. reserv.

07761941   Supplier Number: 64905969   (USE FORMAT 7 FOR FULLTEXT)
TOSHIBA STARTS MASS PRODUCTION OF 16X-SPEED DVD-ROM DRIVE.
AsiaPulse News, p0271
July 19, 2000
Language: English   Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 459

...   in the DVD field with a constant stream of innovative DVD-Video
players, DVD-ROM drives DVD- **RAM**   **drives** , all in full **conformity** with
DVD-format standards. The addition of the new, high-performance, SD-M1502
DVD-ROM drive to...

16/3,K/28   (Item 2 from file: 16)

05318707   Supplier Number: 48096435 (USE FORMAT 7 FOR FULLTEXT)
First Serving Of Fibre Channel Doesn't Satisfy Storage Performance Appetite
Harvey, David A.
Network Computing, p134
Nov 1, 1997
Language: English   Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 2649

...   the hardware RAID's software.
    During this process, we discovered an interesting quirk. While
hardware RAID controllers **map** an entire array as a single physical **drive**
, NT 4.0 **maps** each physical **drive** member of an array as a **separate**
drive . This isn't a problem for the vast majority of applications, which
read and **write** to **virtual**   **drives** , but beware if you use software that
requires access to the physical device itself.
    To measure the...

 16/3,K/29   (Item 3 from file: 16)

01749982   Supplier Number: 42192817 (USE FORMAT 7 FOR FULLTEXT)
FRESH TECHNOLOGY
Computer Reseller News, pc12
July 1, 1991
Language: English   Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 763

...   Run applications, copy files and edit data on another workstation's
drives; hard drives, CD-ROMs, WORMs, **RAM**   **drives** or other local drives
can all be shared among **MAP** Assist users; security controls to let users
decide which drives they wish to share. Benefits: Transfer data...

 16/3,K/30   (Item 1 from file: 15)

02062687 59694025
Where will the intelligence reside in Storage Area Networks?
Smith, Kevin
Computer Technology Review PP: 21-26 Second Quarter 2000
ISSN: 0278-9647 JRNL CODE: CTN
WORD COUNT: 1772

...TEXT: data nearly instantaneously. One approach uses a temporary storage
area to save the "before state" of on- **disk** data. Prior to servicing
write I/Os, the controller copies the "before-state" of **disk** blocks to a
temporary storage area. A data structure directs read-only applications
such as backup to the online **volume** for blocks that have not been
updated since the virtual copy was created and to the **temporary**   **storage**
  area for blocks that have been **updated** . Controller-based **virtual**
volume technology eliminates server overhead, dramatically reduces channel
and disk utilization, and is server independent.

Shared Access And...

...nodes require simultaneous access to the same stored files.
Shared data clusters use a lock manager to **synchronize** file access. Nodes

acquire locks on **disk** blocks before accessing them. As the number of
cluster nodes increase, so do the lock-- related messages...

  16/3,K/31   (Item 2 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
(c) 2005 ProQuest Info&Learning. All rts. reserv.

01494263 01-45251
Virtual organization
Mowshowitz, Abbe
Communications of the ACM v40n9 PP: 30-31+ Sep 1997
ISSN: 0001-0782 JRNL CODE: ACM
WORD COUNT: 4733

...TEXT: in a multitasking or timesharing computer system. The function can
be characterized as the satisfaction of dynamically **changing** requirements
for **storage** in the machine's primary memory. The requirements are
satisfied by switching information between primary and secondary memory.
Such switching is based on a conceptual distinction between **virtual**
storage and the primary physical storage of the machine, where the former
refers to the storage needed by the programs sent to the operating system
for execution. **Secondary storage** serves as a physical approximation of
unlimited **virtual   storage** .

Demand for storage corresponds to the model's abstract requirements, while
the physical storage designates concrete satisfiers. Virtual memory works
by dynamically **mapping   virtual   storage** , or requirements, to primary
storage cells, or satisfiers. In performing this function, the operating
system acts as metamanagement. Assignments of physical cells...

  16/3,K/32   (Item 3 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
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00879954 95-29346
PowerBooks: The next generation
Lu, Cary
Macworld v11n7 PP: 96-103 Jul 1994
ISSN: 0741-8647 JRNL CODE: MAW
WORD COUNT: 3619

...TEXT: converts between many common file formats in the DOS/Windows
world.

* PowerBook File Assistant, which includes file **synchronization** and a
persistent **RAM   disk** .

* Control Strip, a new control panel with power-management features (see
"Take Control").

* Calendar, a basic calendar...

  16/3,K/33   (Item 4 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
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00848077 94-97469
Making memory go further
Anonymous

Macworld v11n5 PP: 162 May 1994
ISSN: 0741-8647 JRNL CODE: MAW

WORD COUNT: 609

...TEXT: files, so it needs to copy only changed files, which is much
faster than copying the entire **RAM** **disk** . **Synchronizing** also makes it
easy to back up while you work, either automatically at preset intervals or
manually...

 16/3,K/34 **(Item 5 from file: 15)**
DIALOG(R)File 15:ABI/Inform(R)
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00794504 94-43896
Benchmarking - Part 5
Anonymous
Capacity Management Review v21n11 PP: 5-6 Nov 1993
ISSN: 0091-7206 JRNL CODE: PPR
WORD COUNT: 1172

...TEXT: each "user" level are stored for analysis. The tests fall into
four groups:

* Tests 1-5 are **simulated** mixes which are intended to approximate
different user profiles, including office automation, data base workload,
software development...

...techniques.

* Tests 12-17 perform system calls, function calls, various types of math,
context switches, reads and **writes** to pipes, etc.

* Tests 18-30 are focused on **disk** I/O. There are several **different**
forms of **disk** I/O tested including raw and UNIX file systems, short and
long records, random and sequential access, plus some specialized tests for
 disk cache and " **syncing** " the **disk** .

The report produced for the benchmark results devotes one page to each of
the 30 tests, comparing...

 16/3,K/35 **(Item 1 from file: 647)**
DIALOG(R)File 647:CMP Computer Fulltext
(c) 2005 CMP Media, LLC. All rts. reserv.

01144076 CMP ACCESSION NUMBER: NWC19971101S0028
**First Serving Of Fibre Channel Doesn't Satisfy Storage Performance
 Appetite**
David A. Harvey
NETWORK COMPUTING, 1997, n 820, PG134
PUBLICATION DATE: 971101
JOURNAL CODE: NWC LANGUAGE: English
RECORD TYPE: Fulltext
SECTION HEADING: Reviews
WORD COUNT: 2646

... the hardware RAID's software.
 During this process, we discovered an interesting quirk. While
hardware RAID controllers **map** an entire array as a single physical
drive , NT 4.0 **maps** each physical **drive** member of an array as a
separate **drive** . This isn't a problem for the vast majority of
applications, which read and **write** to **virtual** **drives** , but beware if
you use software that requires access to the physical device itself.
 To measure the...

16/3,K/36   (Item 1 from file: 674)
DIALOG(R)File 674:Computer News Fulltext
(c) 2005 IDG Communications. All rts. reserv.

034985
new products, 2, desktop computing
Journal: Computerworld   Page Number: 41
Publication Date: January 17, 1994
Word Count: 858   Line Count: 87

Text:
... file access and extend PowerBook battery life by making better use of
Apple Computer, Inc.'s supplied **RAM   disk** .
     Features include file   **synchronization** , which automatically keeps
copies of files on a hard disk and RAM disk, and RAM disk preservation...

PALM INTRANET

Inventor Name Search Result

Your Search was:

Last Name = TRAUT
First Name = ERIC

Application#	Patent#	Status	Date Filed	Title	Inventor Name 39
60508747	Not Issued	159	10/03/2003	SYSTEMS AND METHODS FOR IMPROVING THE X86 ARCHITECTURE FOR PROCESSOR VIRTUALIZATION, AND SOFTWARE SYSTEMS AND METHODS FOR UTILIZING THE IMPROVEMENTS	TRAUT, ERIC
60282111	Not Issued	159	04/07/2001	METHOD FOR ESTABLISHING A DRIVE IMAGE IN A COMPUTING ENVIRONMENT	TRAUT, ERIC P.
11119200	Not Issued	020	04/29/2005	SYSTEMS AND METHODS FOR HYPERVISOR DISCOVERY AND UTILIZATION	TRAUT, ERIC P.
11112273	Not Issued	020	04/21/2005	METHOD AND SYSTEM FOR A RESOURCE NEGOTIATION BETWEEN VIRTUAL MACHINES	TRAUT, ERIC P.
11112234	Not Issued	020	04/21/2005	METHOD AND SYSTEM FOR VIRTUAL SERVICE ISOLATION	TRAUT, ERIC P.
11089951	Not Issued	019	03/25/2005	MECHANISM TO STORE INFORMATION DESCRIBING A VIRTUAL MACHINE IN A VIRTUAL DISK IMAGE	TRAUT, ERIC P.
11078141	Not Issued	020	03/11/2005	SYSTEMS AND METHODS FOR MULTI-LEVEL INTERCEPT PROCESSING IN A VIRTUAL MACHINE ENVIRONMENT	TRAUT, ERIC P.
11075219	Not Issued	020	03/08/2005	METHOD AND SYSTEM FOR A GUEST PHYSICAL ADDRESS VIRTUALIZATION IN A VIRTUAL MACHINE ENVIRONMENT	TRAUT, ERIC

11031158	Not Issued	020	01/07/2005	IMAGE SERVER	TRAUT, ERIC
11031133	Not Issued	020	01/07/2005	IMAGE SERVER	TRAUT, ERIC
11018337	Not Issued	020	12/21/2004	SYSTEMS AND METHODS FOR EXPOSING PROCESSOR TOPOLOGY FOR VIRTUAL MACHINES	TRAUT, ERIC P.
10971948	Not Issued	020	10/22/2004	SYSTEM AND METHOD FOR THE LOGICAL SUBSTITUTION OF PROCESSOR CONTROL IN AN EMULATED COMPUTING ENVIRONMENT	TRAUT, ERIC P.
10971345	Not Issued	020	10/22/2004	SYSTEM AND METHOD FOR THE LOGICAL SUBSTITUTION OF PROCESSOR CONTROL IN AN EMULATED COMPUTING ENVIRONMENT	TRAUT, ERIC P.
10966261	Not Issued	020	10/15/2004	SYSTEMS AND METHODS FOR AUTHORING AND ACCESSING COMPUTER-BASED MATERIALS USING VIRTUAL MACHINES	TRAUT, ERIC P.
10966021	Not Issued	020	10/15/2004	SYSTEMS AND METHODS FOR A DISASTER RECOVERY SYSTEM UTILIZING VIRTUAL MACHINES RUNNING ON AT LEAST TWO HOST COMPUTERS IN PHYSICALLY DIFFERENT LOCATIONS	TRAUT, ERIC P.
10883620	Not Issued	020	06/30/2004	SYSTEMS AND METHODS FOR DEVELOPMENT OF EMULATED DEVICES IN A VIRTUAL MACHINE ENVIRONMENT	TRAUT, ERIC P.
10883496	Not Issued	030	06/30/2004	SYSTEMS AND METHODS FOR RUNNING A LEGACY 32-BIT X86 VIRTUAL MACHINE ON A 64-BIT X86 PROCESSOR	TRAUT, ERIC P.
10882979	Not Issued	020	06/30/2004	SYSTEMS AND METHODS FOR IMPLEMENTING AN OPERATING SYSTEM IN A VIRTUAL MACHINE ENVIRONMENT	TRAUT, ERIC P.
10882972	Not Issued	020	06/30/2004	SYSTEMS AND METHODS FOR VOLUNTARY MIGRATION OF A VIRTUAL MACHINE	TRAUT, ERIC P.

				BETWEEN HOSTS WITH COMMON STORAGE CONNECTIVITY	
10882967	Not Issued	020	06/30/2004	SYSTEMS AND METHODS FOR INITIALIZING MULTIPLE VIRTUAL PROCESSORS WITHIN A SINGLE VIRTUAL MACHINE	TRAUT, ERIC P.
10882891	Not Issued	030	06/30/2004	SYSTEMS AND METHODS FOR INSTRUCTION SEQUENCE COMPOUNDING IN A VIRTUAL MACHINE ENVIRONMENT	TRAUT, ERIC P.
10857702	Not Issued	030	05/28/2004	SYSTEMS AND METHODS FOR IMPROVING THE X86 ARCHITECTURE FOR PROCESSOR VIRTUALIZATION, AND SOFTWARE SYSTEMS AND METHODS FOR UTILIZING THE IMPROVEMENTS	TRAUT, ERIC P.
10794898	Not Issued	030	03/05/2004	SYSTEMS AND METHODS FOR DATA ENCRYPTION USING PLUGINS WITHIN VIRTUAL SYSTEMS AND SUBSYSTEMS	TRAUT, ERIC P.
10734450	Not Issued	020	12/12/2003	SYSTEMS AND METHODS FOR BIMODAL DEVICE VIRTUALIZATION OF ACTUAL AND IDEALIZED HARDWARE-BASED DEVICES	TRAUT, ERIC
10685051	Not Issued	030	10/14/2003	SYSTEMS AND METHODS FOR USING SYNTHETIC INSTRUCTIONS IN A VIRTUAL MACHINE	TRAUT, ERIC
10274298	Not Issued	030	10/18/2002	SOFTWARE LICENSE ENFORCEMENT MECHANISM FOR AN EMULATED COMPUTING ENVIRONMENT	TRAUT, ERIC P.
10211148	Not Issued	030	08/02/2002	METHOD FOR MONITORING AND EMULATING PRIVILEGED INSTRUCTIONS OF PROGRAMS IN A VIRTUAL MACHINE	TRAUT, ERIC P.
10193531	Not Issued	030	07/11/2002	METHOD FOR FORKING OR MIGRATING A VIRTUAL MACHINE	TRAUT, ERIC P.

09918295	Not Issued	071	07/30/2001	METHOD FOR ESTABLISHING A VIRTUAL HARD DRIVE FOR AN EMULATED COMPUTER SYSTEM RUNNING ON A HOST COMPUTER SYSTEM	TRAUT, ERIC P.
09906392	Not Issued	061	07/16/2001	SYSTEM AND METHOD FOR THE LOGICAL SUBSTITUTION OF PROCESSOR CONTROL IN AN EMULATED COMPUTING ENVIRONMENT	TRAUT, ERIC P.
09809731	Not Issued	061	03/15/2001	METHOD FOR HYBRID PROCESSING OF SOFTWARE INSTRUCTIONS OF AN EMULATED COMPUTER SYSTEM	TRAUT, ERIC P.
09747492	Not Issued	094	12/21/2000	SYSTEM AND METHOD FOR THE LOGICAL SUBSTITUTION OF PROCESSOR CONTROL IN AN EMULATED COMPUTING ENVIRONMENT	TRAUT, ERIC P.
09617709	6651132	150	07/17/2000	SYSTEM AND METHOD FOR EMULATING THE OPERATION OF A TRANSLATION LOOK-ASIDE BUFFER	TRAUT, ERIC P.
09617669	Not Issued	071	07/17/2000	SYSTEM AND METHOD FOR DISPLAYING CURRENT IMAGES OF VIRTUAL MACHINE ENVIRONMENTS	TRAUT, ERIC P.
08906375	5790825	150	08/05/1997	METHOD FOR EMULATING GUEST INSTRUCTIONS ON A HOST COMPUTER THROUGH DYNAMIC RECOMPILATION OF HOST INSTRUCTIONS	TRAUT, ERIC P.
08555166	Not Issued	166	11/08/1995	METHOD FOR EMULATING GUEST INSTRUCTIONS ON A HOST COMPUTER THROUGH DYNAMIC RECOMPILATION OF HOST INSTRUCTIONS	TRAUT, ERIC P.
08409477	6256658	150	03/22/1995	APPARATUS FOR EXECUTING A PLURALITY OF PROGRAM SEGMENTS HAVING DIFFERENT OBJECT CODE TYPES IN A SINGLE PROGRAM OR PROCESSOR ENVIRONMENT	TRAUT, ERIC P.
07993923	5452456	150	12/18/1992	APPARATUS FOR EXECUTING A PLURALITY OF PROGRAM	TRAUT, ERIC P.

				SEGMENTS HAVING DIFFERENT OBJECT CODE TYPES IN A SINGLE PROGRAM OR PROCESSOR ENVIRONMENT	

Inventor Search Completed: No Records to Display.

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TRAUT	ERIC	Search

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Inventor Name Search Result

Your Search was:

Last Name = GILES
First Name = AARON

Application#	Patent#	Status	Date Filed	Title	Inventor Name 7
60282111	Not Issued	159	04/07/2001	METHOD FOR ESTABLISHING A DRIVE IMAGE IN A COMPUTING ENVIRONMENT	GILES, AARON
10794898	Not Issued	030	03/05/2004	SYSTEMS AND METHODS FOR DATA ENCRYPTION USING PLUGINS WITHIN VIRTUAL SYSTEMS AND SUBSYSTEMS	GILES, AARON
09918295	Not Issued	071	07/30/2001	METHOD FOR ESTABLISHING A VIRTUAL HARD DRIVE FOR AN EMULATED COMPUTER SYSTEM RUNNING ON A HOST COMPUTER SYSTEM	GILES, AARON S.
09809731	Not Issued	061	03/15/2001	METHOD FOR HYBRID PROCESSING OF SOFTWARE INSTRUCTIONS OF AN EMULATED COMPUTER SYSTEM	GILES, AARON
09617624	Not Issued	071	07/17/2000	SYSTEM AND METHOD FOR EMULATING THE OPERATION OF A VIDEO GRAPHICS ADAPTER	GILES, AARON
09222461	6115054	150	12/29/1998	GRAPHICS PROCESSOR EMULATION SYSTEM AND METHOD WITH ADAPTIVE FRAME SKIPPING TO MAINTAIN SYNCHRONIZATION BETWEEN EMULATION TIME AND REAL TIME	GILES, AARON S.

Inventor Search Completed: No Records to Display.

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Inventor Name Search Result

Your Search was:

Last Name = CHAKRABORTY
First Name = PARAG

Application#	Patent#	Status	Date Filed	Title	Inventor Name 5
60282111	Not Issued	159	04/07/2001	METHOD FOR ESTABLISHING A DRIVE IMAGE IN A COMPUTING ENVIRONMENT	CHAKRABORTY, PARAG
11112273	Not Issued	020	04/21/2005	METHOD AND SYSTEM FOR A RESOURCE NEGOTIATION BETWEEN VIRTUAL MACHINES	CHAKRABORTY, PARAG
11089951	Not Issued	019	03/25/2005	MECHANISM TO STORE INFORMATION DESCRIBING A VIRTUAL MACHINE IN A VIRTUAL DISK IMAGE	CHAKRABORTY, PARAG
09918295	Not Issued	071	07/30/2001	METHOD FOR ESTABLISHING A VIRTUAL HARD DRIVE FOR AN EMULATED COMPUTER SYSTEM RUNNING ON A HOST COMPUTER SYSTEM	CHAKRABORTY, PARAG

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